Final
Subsequent Environmental Impact Report

Santa Clara Valley Water District
Stream Maintenance Program Renewal
2027-2036

Volume II of II

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Prepared for:
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686
Contact: Billy Williams
408-630-2090

Prepared by:
Montrose Environmental Solutions, Inc.
1 Kaiser Plaza, Suite 340
Oakland, California 94612
Contact: Ken Schwarz
510-986-1851

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Acronyms and Abbreviations

Abbreviation	Full Term
°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
A	
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ACF	Advanced Clean Fleet
ACT	Advanced Clean Trucks
AF	Acre-feet
AMM	avoidance and minimization measures
ANI	Management of Animal Conflicts (Best Management Practice)
APSA	Aboveground Petroleum Storage Act
ASR	Annual Summary Report
ATCM	Airborne Toxic Control Measures
B	
BA	Biological Assessment
BAAQMD	Bay Area Air Quality Management District
BANK/BANK_X	Bank Protection (Best Management Practice)
Basin Plan	Water Quality Control Plan
BCDC	San Francisco Bay Conservation and Development Commission
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
Btu	British thermal units

Abbreviation	Full Term
C	
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAC	County Agricultural Commissioners
CAFE	Corporate Average Fuel Economy
CalARP	California Accidental Release Prevention
Cal. Code Regs.	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
California Register	California Register of Historical Resources
Cal-IPC	California Invasive Plant Council
Cal OES	California Office of Emergency Services
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS	2009 California Climate Adaptation Strategy
CASGEM	California Statewide Groundwater Elevation Monitoring Program
CBE	California State Board of Equalization
CBR	California Black Rail
CC	Central Coast
CCAP	Climate Change Action Plan
CCC steelhead	Central California Coast steelhead
CCCC	California Climate Change Center
CCR	California Clapper Rail
CDF	California Department of Finance
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife

Abbreviation	Full Term
CDPR	California Department of Pesticide Regulation
CEC	California Energy Commission
CEMA	California Emergency Management Agency
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIP	Capital Improvement Project
CIWA	California Integrated Waste Management Act of 1989
cm	Centimeter
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level: sound measurement that emphasizes the undesirability of noise occurring during the night
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalents
County	Santa Clara County
CPAU	City of Palo Alto Utilities
CPUC	California Public Utilities Commission
CRPR	California Native Plant Society California Rare Plant Rank
CSSC	California Species of Special Concern
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
cy	cubic yards

Abbreviation	Full Term
D	
dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DEH	Santa Clara County Department of Environmental Health
DO	Dissolved oxygen
DPM	Diesel particulate matter
DPS	distinct population segment
DSEIR	draft subsequent environmental impact report
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
E	
EFH	Essential Fish Habitat
EIR	environmental impact report
EIS	environmental impact assessment
EMFAC	Emission Factors model
EO	Executive Order
ESA	Endangered Species Act
ESL	environmental screening level
Evelyn Project	Stevens Creek Evelyn Avenue Fish Passage Project
F	
F&G Code	California Fish and Game Code
FC	Federal Candidate
FE	Federal Endangered
FEIR	final environmental impact report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act

Abbreviation	Full Term
FMA	Five-Year Mitigation Area
FMP	Fishery Management Plan
FP	Fully Protected
FPE	Proposed Endangered
FPT	Proposed Threatened
fps	feet per second
FR	Federal Register
FSEIR	final subsequent environmental impact report
FT	Federal Threatened
FTA	Federal Transit Administration
FWCA	Fish and Wildlife Coordination Act
G	
gal/yr	gallons per year
GEN	Pre-project Planning and General (Best Management Practice)
GIS	geographic information system
GHG	greenhouse gas
GSA	Groundwater sustainability agency
GSP	Groundwater sustainability plan
GWh	gigawatt-hours
GWMP	Groundwater Management Plan
GWP	Global warming potential
H	
H_2S	Hydrogen sulfide
Habitat Agency	Santa Clara Valley Habitat Agency
HAZMAT	hazardous materials
HEPA	High-efficiency particulate air
HFCs	hydrofluorocarbons
Hg	mercury
HMBP	Hazardous Materials Business Plan
HMIS	Hazardous Material Inventory Statements

Abbreviation	Full Term
HMMP	Hazardous Material Management Plan
HMMP	Habitat Mitigation and Monitoring Plan
HMTA	Hazardous Materials Transportation Act
HM-X	Pesticide (Best Management Practice)
HOV	High-occupancy vehicle
HSWA	Hazardous and Solid Waste Amendments
HVAC	heating, ventilation, and air conditioning
Hwy	U.S. Highway
Hz	Hertz
I	
I-	Interstate
IAWG	Interagency Working Group
IECA	International Erosion Control Association
IEPR	Integrated Energy Policy Report
IIPMP	County-wide Integrated Invasive Plant Management Program
IIPP	Injury and Illness Prevention Program
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
ISA	International Society of Arboriculture
ISO	Independent System Operator
ITP	Incidental Take Permit
L	
lb	pounds
LCD	Liquid crystal display
LCFS	Low Carbon Fuel Standard
Ldn	Day-night sound level
Leq	equivalent sound level
Lmax	maximum sound level measured during the measurement period
Lmin	minimum sound level measured during the measurement period
LOS	level of service

Abbreviation	Full Term
LPG	liquefied petroleum gas
LRA	Local Responsibility Area
LUFT	Leaking underground fuel tank
Lxx	Percentile-exceeded sound level: sound level exceeded a specific percentage of time during a specific time period
M	
MBTA	Migratory Bird Treaty Act
MeHg	methylmercury
MFA	Mitigation Feasibility Assessment
mg/L	Milligrams per liter
MJHMP	Multijurisdictional Hazard Mitigation Plan
MMBtu	million British thermal units
$MMCO_2e$	million tonnes of carbon dioxide equivalents
MMPA	Marine Mammal Protection Act
MT	metric tonnes
mpg	miles per gallon
MRP	Municipal Regional Stormwater NPDES Permit
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MW	megawatt
N	
N_2O	Nitrous oxide
NH_4	methane
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
N.D.	no date
NEPA	National Environmental Policy Act
NF_3	Nitrogen trifluoride

Abbreviation	Full Term
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO_2	Nitrogen dioxide
NOA	naturally occurring asbestos
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPW	Notice of Proposed Work
NRCS	Natural Resources Conservation Service
NTU	Nephelometric turbidity units
O	
O_3	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OGV	Ocean-Going Vessels
OHP	California Office of Historic Preservation
OHW	ordinary high water
OHWM	ordinary high water mark
OPR	California Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
P	
PAHs	Polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCR	Post-construction Report
PFCs	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM2.5	particulate matter less than 2.5 microns in diameter
PM10	particulate matter less than 10 microns in diameter
PMA	permanently mitigated areas

Abbreviation	Full Term
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
PPE	personal protective equipment
ppm	parts per million
PPV	peak particle velocity
Program Renewal	Stream Maintenance Program 2027-2036
Pub. Res. Code	Public Resources Code
PVC	Polyvinyl chloride
PWRPA	Power and Water Resources Pooling Authority
R	
RCRA	Resource Conservation and Recovery Act
REVEG-X	Revegetation (Best Management Practice)
RGP	Regional General Permit
ROG	reactive organic gases
RPF	Registered Professional Forester
RPS	Renewables Portfolio Standard
RSL	risk-based screening level
RWQCB	Regional Water Quality Control Board
S	
SAR	Second Assessment Report
SB	Senate Bill
SC	State Candidate
SCBWMI	Santa Clara Basin Watershed Management Initiative
SCCC steelhead	South Central California Coast steelhead
SCCFD	Santa Clara County Fire Department
SCCVCD	Santa Clara County Vector Control District
SCRWA	South County Regional Wastewater Authority
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCWA	Sonoma County Water Agency
SE	State Endangered

Abbreviation	Full Term
SED / SED-X	Sediment Removal (Best Management Practice)
SEIR	subsequent environmental impact report
SFBAAB	San Francisco Bay Area Air Basin
SF_6	Sulfur hexafluoride
SFEIR	subsequent final environmental impact report
SGC	California Strategic Growth Council
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SMP	Stream Maintenance Program
SMP-1	Stream Maintenance Program 2002–2012
SMP-2	Stream Maintenance Program 2013–2023
SMP-3	Stream Maintenance Program 2027-2036
SO_2	Sulfur dioxide
SORE	Small Off-road Engine
SP	State Protected
sq ft	square feet
SR	State Rare
SR	State Route
SRA	State Responsibility Area
SRA	shaded riverine aquatic (habitat)
SSCFPD	South Santa Clara Fire Protection District
ssp	subspecies
ST	State Threatened
State Parks	California Department of Parks and Recreation
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T	
TAC	toxic air contaminant
TMDL	Total Maximum Daily Load

Abbreviation	Full Term
U	
UC	University of California
UPRR	Union Pacific Railroad
URMP	Urban Runoff Management Plan
U.S.	United States
U.S. 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
U.S. DOT	U.S. Department of Transportation
US EIA	U.S. Energy Information Administration
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	United States Fish and Wildlife Service
UTC	United Technologies
V	
Valley Water	Santa Clara Valley Water District
var	variety
Vdb	vibration velocity in decibels
VEG-X	Vegetation (Best Management Practice)
VegCAMP	CDFW's Vegetation Classification and Mapping Program
VHP	Santa Clara Valley Habitat Plan
VMT	vehicle miles traveled
VTA	Santa Clara Valley Transportation Authority
VTP	Valley Transportation Plan
W	
WDRs	waste discharge requirements
WMA	Watershed management area
WUI	wildland-urban interface

Abbreviation	Full Term
Z	
ZEV	zero emission vehicles

Glossary of Significant Terms

1 percent flood	Refers to a flood of a magnitude that has an estimated probability of 1 in 100 of occurring in any given year. Technically more precise way of referring to the "100-year flood." Generally, 1 percent, 2 percent, and 10 percent events refer to levels of flood flows with an expected recurrence of 100, 50, and 10 years, respectively.
100-Year Flood	Flood of a magnitude with an expected recurrence of once in 100 years. Synonymous with 1 percent flood.
Assembly Bill (AB) 32	Assembly Bill 32, the California Global Warming Solutions Act of 2006, which aimed to reduce greenhouse gas emissions to 1990 levels by 2020. See also "Senate Bill (SB) 32."
Adaptive Management	A dynamic process that recognizes that the future cannot be perfectly predicted. In response to imperfect predictions, planning and management strategies are modified as better information becomes available. It is a continuous improvement process whereby monitoring and analysis of the results of past actions are fed back into the current decision-making process.
Aggradation	Process of a channel raising its elevation through deposition of sediments. A type of fluvial geomorphic instability. See also "Degradation."
Annual Summary Report (ASR)	A yearly report summarizing the maintenance activities conducted, restoration and mitigation implemented, and other updates provided to regulatory agencies.
Annual Work Cycle	The recurring phases of planning, execution, and reporting for annual maintenance under the Program Renewal.
Alternatives	CEQA requires an EIR to examine a "reasonable range" of alternatives to the project or its location. These must include the "no project" alternative. Alternatives must be feasible, meet most of the project objectives, and reduce one or more of the project's significant effects (State CEQA Guidelines Section 15126.6).
Anadromous	A term used to describe the life history characteristics of fishes that move from saltwater to freshwater to lay eggs. The juvenile fish then move from freshwater to saltwater to grow and mature.
Annual Plant	A plant that completes its life cycle and dies in one growing season or one year (e.g., poppies, wild oat).
Annual Work Plan	The stream maintenance work identified for a given year through field inspections. Specific information, such as location, size, and type of sediment removal, vegetation management, and bank stabilization work activities, is provided in the annual work plan.

Appurtenant Structures	Accessory structures, such as storm outfalls, stream gauges, trash racks, flap gates, tide gates, bridges, vaults, wing walls, and headwalls, that are associated with channels.
Aquatic Vegetation	Herbaceous vegetation that grows in the wetted channel bottom and is typically dependent on either sustained flow or prolonged periods of water on site for survival.
Avian	Bird or bird-like.
Avoidance	Strategies for the planning, design, maintenance, and operation of Valley Water facilities to provide water supply and flood protection, and that refrain from causing significant adverse environmental impacts.
Bay Area Air District	Formerly Bay Air Quality Management District (BAAQMD), which regulates air pollution in the San Francisco Bay Area.
Bank/Bench	The area of the bank above the bankfull elevation and below the toe of levee inboard if in a reach with levee~~, and below the property line if not in a levee reach~~.
Bank Repair	See "Bank Stabilization." ~~Maintenance of existing bank stabilization structures with in-kind, in-place materials. This type of maintenance occurs when such structures fail.~~
Bank Stabilization	Bank stabilization involves any action by Valley Water to stream banks and/or beds that are eroding (repair), as well as preventive erosion protection. Valley Water implements stream bank stabilization when the problem (1) causes or could cause significant damage to a property or adjacent property, (2) is a public safety concern, (3) negatively affects transportation or recreational use, (4) negatively affects water quality, and/or (5) negatively affects riparian habitat. Bank protection stabilizes a channel bank and/or bed by using rock, rip rap, concrete, soft materials, vegetation, or a combination of materials or methods. Bank stabilization can also include preventative maintenance to ensure banks do not erode in the future. This new work is considered routine maintenance because it is either restoring the flood protection function of a modified channel, or it is repairing a natural bank to its approximate condition prior to becoming an erosion problem.
Bankfull	The river elevation (stage) at which the most effective geomorphic work occurs. This is also referred to as the *dominant discharge* and is the stage that generally corresponds to a flow event with a 1- to 2-year recurrence interval. When the channel is flowing full, the water surface is at floodplain level and the flow rate is the bankfull discharge.
Bankfull Elevation	The point where the normal channel meets the floodplain, the elevation at the top of the channel banks. When the channel is flowing full, the water surface is at floodplain level and the flow rate is the bankfull discharge.

Baseline	The environmental conditions in the vicinity of the project as they exist at the time the Notice of Preparation of an Environmental Impact Report is published.
Basin	For the purposes of the Stream Maintenance Program, a depression or valley that drains to a common waterbody. In Santa Clara County, two major hydrologic basins drain into either San Francisco Bay or Monterey Bay. In the northern portion of the county, streams of the Santa Clara Basin drain to San Francisco Bay. To the south, streams in the Pajaro River Basin drain ultimately to Monterey Bay.
Bed	The bottom of a body of water, such as a stream.
Bedload	Material moving on or within a few particle diameters above the streambed, rolling or sliding, but not carried in the water column itself. Bedload generally moves more slowly than the streamflow itself. Compare with suspended sediment. Bedload does not mean the rate of discharge of bed material. See also "Bedload Discharge."
Bedload Discharge	The rate of bedload transport; the quantity of bedload passing a given point on the channel in a unit of time.
Bench	A flat or slightly sloped area that is adjacent to a stream channel and above ordinary high water; also known as a terrace.
Berm	A raised area of earth acting as a temporary or permanent levee.
Best Management Practice (BMP)	An activity, procedure, or other standard management and work practice that provides the most effective means of preventing or reducing pollution or other adverse environmental consequences. BMPs are incorporated into project activities to avoid and minimize environmental impacts.
Biological Monitor	An individual who has academic and professional experience in biological sciences and related resource management activities as they pertain to this project; experience with construction-level biological monitoring; ability to recognize species that may be present within the project area; and familiarity with the habits and behavior of those species.
Biologist	An individual who has academic and professional experience in biological sciences and related resource management activities as they pertain to this project; ability to recognize species that may be present within the project area; and familiarity with the habits and behavior of those species. See also "Qualified Biologist."
Biotechnical	A method of bank stabilization emphasizing the incorporation of soft structures (e.g., vegetation) rather than hard structures (e.g., concrete). See also "Hard Structures" and "Soft Structures."

Box Culvert	A water channel in the shape of a rectangular concrete box.
Brackish Water	Water that is a mixture of freshwater and saltwater, with a salinity less than that of seawater.
Bypass Channel	A flood control facility through which a portion of a stream's flow is diverted at one point and reintroduced into the stream at another point downstream. Bypass channels can be used during the construction or maintenance process. Permanent bypass channels can also be designed to accommodate flood flows.
Bypass Structure	On a construction site, a generic term for any type of structure used to pond water and convey it around a work site (e.g., cofferdam, bypass pipe, channel).
California Department of Fish and Wildlife (CDFW)	A state agency responsible for the management and protection of California's fish, wildlife, and plant resources.
California Department of Pesticide Regulation (CDPR)	Regulates the sale and use of pesticides in California to protect public health and the environment.
California Environmental Quality Act (CEQA)	The California Environmental Quality Act (California Public Resources Code Sections 21000 et seq.) establishes a duty for public agencies to avoid or minimize environmental damage where feasible, recognizing that a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors. CEQA is intended to facilitate (1) the disclosure of the significant environmental effects of proposed activities to decision makers and the public, (2) the identification of ways to avoid or reduce environmental damage, and (3) the prevention of environmental damage by requiring the implementation of feasible alternatives or mitigation measures.
Capital Improvement Program (CIP)	A Valley Water program focused on making smart investments in infrastructure that are critical to providing safe, clean water; flood protection; and environmental stewardship to Santa Clara County. Valley Water's CIP includes a five-year plan, updated annually on a rolling basis, identifying capital projects to be implemented. For the purposes of the Stream Maintenance Program, CIP projects are large flood protection construction projects that affect the flood conveyance capacity of the stream. These projects are not considered routine stream maintenance.
California Air Resources Board (CARB)	The state agency responsible for air quality regulation and implementing climate change programs.
Certified Arborist	An individual who specializes in the care and management of trees, focusing on their health, safety, and aesthetic value.

	They assess tree conditions, diagnose diseases, and recommend treatments or preventive measures.
Channel	A natural stream that conveys water, a ditch or channel excavated for the flow of water, or the area where water is concentrated to flow across the landscape (e.g., creeks, rivers, flood control channels, and similar facilities). Channels include creeks and ditches, but do not include culverts, pipes, and other closed structures.
Channel Erosion	Includes the processes of streambank erosion, streambed scour, and degradation.
Channel Stabilization	Any action by Valley Water to repair and prevent scouring or downcutting of stream beds. See also "Bank Stabilization."
Clean Water Act	Federal Water Pollution Control Act of 1973, 33 U.S.C. §§ 1251-1387A. broad federal statute with the goal of maintaining and restoring waters of the United States. See also "Waters of the United States."
Community Noise Equivalent Level (CNEL)	Similar to day-night average sound level (Ldn) but includes an evening penalty in addition to a nighttime penalty.
Compensatory Mitigation	The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, or preservation of wetlands and other resources to replace those resources impacted by maintenance activities. Specifically, compensatory mitigation is developed expressly for the purpose of compensating for unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization of impacts have been achieved in compliance with law or requirements of regulatory agencies. (Federal Register March 6, 1995, Federal Guidance for the Establishment, Use and Operation of Mitigation Banks.) In the Stream Maintenance Program, compensatory mitigation is mitigation in perpetuity that is to be provided by Valley Water to offset significant residual impacts that cannot be avoided.
Compliance Monitoring	Continuous process that ensures an agency's compliance with policies and procedures.
Confluence	A meeting of two or more streams or rivers.
Corrective Maintenance	Corrective maintenance describes a group of work activities that are not conducted on a regular schedule but are conducted as needed to correct a specific issue.
Cultural Resources	Historical, archaeological, and tribal resources with significance to a cultural heritage.
Culvert	Any covered structure not classified as a bridge that conveys a waterway under a road or other paved area.

Cumulative Impact	Changes to the environment caused by the combined impact of past, present, and foreseeable projects.
Day-Night Average Sound Level (Ldn)	A 24-hour average sound level with added penalties for nighttime noise.
dbA	A-weighted decibel, a unit of sound level that accounts for human hearing sensitivity.
Debris	All non-sedimentary materials deposited in channels, on flood plains, or above top of bank as a result of natural conditions or through human activity, including such materials as downed trees and/or tree limbs, tires, shopping carts, trash, furniture, homeless encampments, and other items.
Debris Basin	A depression formed by the construction of a barrier or dam built at a suitable location to retain natural materials (e.g., rock, sediment, plant material) that can be conveyed along steep hillside streams during high flows. Usually placed in hillside areas where access is better for removing sediment, generally prior to entering urbanized reaches. See also "Sediment Basin."
Defensible Space	A buffer zone around a structure where vegetation has been managed to reduce wildfire risk.
Degradation	Process of a channel lowering its elevation through increased erosion, channel bed scour, or down-cutting. A type of fluvial geomorphic instability. See also "Aggradation."
Design Capacity	An engineering term used to describe the amount of water that a modified channel was designed to convey. Generally, the design capacity for improved Valley Water facilities is to accommodate the 1-percent or 100-year flood, although this can vary. This is also known as the level of protection. Capacity is measured in cubic feet per second. See also "Flood Capacity."
Design Flood	The maximum calculated discharge intended to be conveyed in the design of a capacity-constructed channel. The maximum level of flood protection used as a criterion in the design of a constructed or improved channel or waterway.
Design Flow	Flow that a facility was designed to convey.
Designated Individual	An individual who has been trained directly by a Valley Water qualified biologist and has shown proficiency in carrying out specific tasks.
Diameter at Breast Height (dbh)	A measurement of tree trunk diameter at approximately 4.5 feet above ground level. The dbh of multistem trees will be calculated by adding the dbh of the individual stems. The dbh of fast-growing multistem trees, such as willows or Acacia, will be calculated by adding the dbh of the individual stems and then dividing by two.

Downed tree management	The removal, repositioning, or retention of fallen trees (especially large woody debris) to balance habitat value and flood control needs.
Draft Environmental Impact Report (DEIR)	A preliminary version of the EIR made available for public and agency review and comment.
Drop Structure	A structure designed to convey flows over a vertical distance from a higher to a lower elevation.
Emergency	A situation is considered an "emergency" if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resource Code Section 21060.3). Emergency repair or activities associated with an emergency are not addressed by the Stream Maintenance Program. Most emergency projects are exempt from review pursuant to CEQA (Public Resource Code Section 21080(b)(2), (3), (4)), although there may be post-permitting requirements.
Emergent Vegetation	Non-woody vegetation, including cattail and bulrush, that is rooted in the water but has stems and/or leaves that extend out of the water. For purposes of the Stream Maintenance Program, emergent vegetation and herbaceous vegetation are considered different categories.
Enhancement	The manipulation of a site or feature to heighten, intensify, or improve the resource. Enhancement results in a selective improvement in function and/or value but does not result in a gain in resource area.
Environmental Impact Report (EIR)	A detailed statement prepared under CEQA describing and analyzing the significant environmental impacts of a project and discussing ways to mitigate or avoid the effects.
Ephemeral	Creek that only flows for short periods of time during or immediately following a rain event.
Equivalent Continuous Sound Level (Leq)	The average sound level over a specified period.
Erosion	The detachment and movement of soil and rock fragments by water and other geological agents, which results in the wearing away of the land. When water is the eroding agent, erosional processes include sheet and rill erosion, gully erosion, and channel erosion.
Establishment	Creation; manipulation of a site to develop resource functions and values that did not previously exist at the site. Establishment results in a gain in resource area.
Federal Clean Water Act	Primary federal law governing water pollution in the U.S., aiming to ensure surface waters meet standards.

Federal Emergency Management Act (FEMA)	Federal agency responsible for coordinating disaster response and floodplain management.
Fish Ladders	A series of artificial, stepped pools that enables fish traveling upstream, against the flow of water, to span a large vertical distance in a series of gradual steps. Used at dams or other in-stream barriers.
Five-Year Mitigated Area (FMA)	Areas where a vegetation management or sediment removal activity has occurred and has been mitigated for under SMP-2. FMAs are considered to be mitigated for that impact activity and location for a period of five years after the initial impact.
Flood Capacity	The flow or volume of water a channel can carry. Capacity is dependent on cross-sectional area and frictional components (e.g., channel vegetation).
Floodplain	The relatively flat area extending from the top of a creek bank away from a creek that may be inundated occasionally during high water events.
Flood Conveyance Capacity	The ability of a water channel to carry floodwaters without overflowing its banks.
Flood Protection Facility	For purposes of the Stream Maintenance Program, any watercourse, whether natural or artificial, in which water does or may flow and that is under ownership or control of Valley Water for flood protection purposes.
Flow Conveyance	Flow that a facility was designed to convey; often dependent on channel cross-sectional properties.
Flow Rate	Measure of how quickly a volume of water moves in a creek.
Fluvial	Pertaining to rivers.
Fuel Load	The amount of combustible material (e.g., brush, trees) available in an area that contributes to fire risk.
Gabion Basket or Mattress	Galvanized wire mesh panels filled with rock, used for structural purposes. They can be connected and used for retaining walls, revetments, or bank stabilization.
Geomorphology	The study of the forms of the earth's surface and the processes that shape them. Fluvial geomorphology involves the study of streams and sediment processes: transport, erosion, storage, and deposition.
Government Code Section 51182	California statute outlining defensible space and fuel reduction requirements in high fire hazard areas.
Greenhouse Gases (GHG)	Gases which trap heat in the atmosphere and contribute to global warming.
Habitat	The specific area where environmental conditions (i.e., physical and biological conditions) are present that are

	required to support a given species. To be complete, an organism's habitat must provide all of the basic requirements of life for that species. Habitat may be occupied (i.e., individuals or a population of the species are or have recently been present) or unoccupied.
Habitat Connectivity	The degree to which habitats are connected to allow movement of wildlife and maintain ecosystem function.
Habitat Conservation Plan (HCP)	Plan under the Endangered Species Act (ESA) negotiated between the federal government and private landowners or state and local governments. These plans are designed to allow landowners to receive a federal permit to unintentionally harm listed species in the course of completing projects. In exchange for a permit, landowners agree to pursue specific management protections for threatened and endangered species. An example of an HCP is the Santa Clara Valley Habitat Plan (VHP).
Hard Structures	A type of bank stabilization structure incorporating rock, rip rap, sack concrete, gabion baskets and mattresses, or concrete. These structures are inert and rigid.
Hardscape	Concrete, rock, gabions, or other permanent, hard-surface channel or bank treatment. Refers to designs that utilize predominantly hard structures and are generally incapable of supporting vegetation. See also "Softscape" and "Hybrid."
Hazard Tree	The combination of a failure of a tree or part of a tree with the presence of an adjacent target. A hazard does not exist if there will not be an impacted target.
Headwaters	The minor drainages in the extreme upper watershed.
Herbaceous Vegetation	Non-woody vegetation, including grasses, broadleaf weeds, cattails, and bulrushes, that is rooted out of the water. This may include annuals, biennials, and perennials. For purposes of the Stream Maintenance Program, emergent vegetation and herbaceous vegetation are considered to be different categories.
Herbicide	A chemical agent used to control or inhibit plant growth.
Hybrid	For purposes of the Stream Maintenance Program, bank stabilization projects that combine hardscape and softscape. See also "Hardscape" and "Softscape."
Hydraulic Roughness	A measure of a channel's resistance to flow, influenced by vegetation, debris, and surface characteristics.
Hydrologic Basin	For the purposes of the Stream Maintenance Program, a depression or valley that drains to a common waterbody. In Santa Clara County, there are two major hydrologic basins draining into San Francisco Bay or Monterey Bay. In the northern portion of the county, streams of the Santa Clara Basin drain to San Francisco Bay. To the south, streams in the

	Pajaro River Basin drain ultimately to Monterey Bay. Each basin comprises several watersheds.
Hydrology	The science (or study) of water in the natural environment with a focus on the circulation and distribution of water as expressed in the hydrologic cycle or water balance.
Hydroseed	A process for revegetation of large areas. Plant seed, fertilizer, straw mulch, a binding agent, and green dye are mixed in a truck-mounted tank and sprayed through a hose onto the bare ground.
Impact	A strong effect of an action that leads to a change of condition. See also "Significant Environmental Impact."
Impervious Hardscape	Paved areas such as streets and sidewalks, other developed areas, or bank stabilization methods that are impenetrable to water.
Implementation Measure	An action, procedure, program, or technique that carries out policy. Implementation measures provide specific guidance to Valley Water managers and staff in the environmental review and processing of routine stream maintenance projects.
In-channel/In-stream	For the purposes of the Stream Maintenance Program, inboard levee toes to the opposite inboard levee toe. Where there is not a levee, inboard toe of the stream, ordinarily associated with "channel bottom."
In-Kind Repair	For the purposes of the Stream Maintenance Program, in-kind repair refers to repair of structures with similar materials within the same footprint.
Inlet	An arrangement for conveying surface water into an underdrain, pipe, culvert, or channel.
Instream Vegetation Removal	Physical removal of vegetation from the instream area using hand tools or other mechanical means.
Integrated Invasive Plant Management Program (IIPMP)	A program being developed by Valley Water to manage invasive plant species across countywide facilities.
Intermittent Stream	A stream that has flowing water only during certain times of the year. During dry periods, an intermittent stream may not have flowing water.
Invasive Plant	A non-native plant that, once introduced, establishes, quickly reproduces and spreads, and cause harm to the environment, economy, or human health**.** Invasive plant species may alter ecological processes such as pollination patterns, nutrient cycling, and fire regimes, and may modify canopy architecture, causing a loss of cover, nesting and foraging habitat for wildlife species. Invasive plants' aggressive growth patterns often outcompete native plant species.

Invasive Species	A plant and/or wildlife species that is non-native or alien to the ecosystem and whose introduction causes or is likely to cause environmental harm. See also "Invasive Plant."
Invert	The lowest point of the internal cross section of a pipe, culvert, or channel; the elevation of the bottom of the channel. See also "In-Channel/Instream."
Levee	An embankment constructed to prevent a river or stream from flooding adjacent lands.
Levee Toe	The point on a levee slope where the designed and constructed levee ends and natural ground begins.
Levee Top	Top area of a levee between inboard and outboard. Generally flat, but not necessarily coinciding with a levee road.
Listed Species	A species that is formally designated as endangered or threatened by the state or federal Endangered Species Act.
Long-Term Permit	A non-specific term referring to permits, authorizations, or memorandums of understanding from the United States Army Corps of Engineers, Regional Water Quality Control Boards, State Water Resources Control Board, Bay Conservation and Development Commission, and California Department of Fish and Wildlife that are effective for a specified period of time (e.g., 5 or 10 years) or an indefinite period.
Lower Watershed	Generally the watershed below (downstream of) a reservoir, including the main channel and outlet to the Bay.
Low-Flow Channel	A section of stream that carries the more frequent, periodic streamflows.
Maintenance Guidelines	Engineering documents that give guidance on maintenance requirements for design flow conveyance capacity of Valley Water flood protection facilities. The guidelines may include design details, historical information, or special requirements for a reach of channel.
Marsh Master	A mechanized vegetation management vehicle with low ground pressure used for aquatic plant control in wetland, marsh, and floodplain ~~and marsh~~ areas. The Marsh Master can be fitted with multiple attachments for mowing, cutting, discing, and applying herbicide.
Mean High Water (MHW)	In San Francisco Bay, there are two high tides each day, usually with different elevations. Mean High Water is defined as the average height of these two tides.
Mean Higher High Water (MHHW)	The average height of the higher of the two high tides in San Francisco Bay.
Mitigation	Valley Water's Board of Directors has adopted the following definition: "Action taken by Valley Water to fulfill CEQA/NEPA permit requirements and court-mandated mitigation to avoid, minimize, rectify, or reduce adverse

	environmental impacts, or to compensate for the impact(s) by replacing or providing substitute resources or environments."
Modified Channel	A waterway in which engineered alterations have occurred to improve the passage of flood flows or to provide drainage. This includes straightening (or channelization), containing a watercourse within constructed banks or levees, or lining banks with concrete, rip rap, gabions, or sack concrete.
National Environmental Policy Act (NEPA)	A U.S. environmental law that requires federal agencies to assess the environmental effects of their proposed actions.
Natural Channel	A watercourse without any significant improvements or modifications and very little evidence of historical alterations. See also "Unmodified Channel."
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.
Nitrogen Oxides (NOx)	A group of highly reactive gases that contribute to smog and acid rain.
Non-Jurisdictional	Areas outside permitting authority of a resource agency.
Non-Native Plant	For SMP purposes, any plant species which is thought to have not been present in Santa Clara County prior to the mid-1500s CE and which was introduced by human activity.
Notice of Proposed Work (NPW)	A document submitted annually to regulatory agencies detailing proposed maintenance work and environmental considerations.
Obstruction	Material or objects that impede a facility from operating appropriately.
Ordinary High Water (OHW)	In non-tidal area, the highest level of water in a channel reached by commonly experienced flows. Defines the limit of the U.S. Army Corps of Engineers jurisdiction in the San Francisco Bay Area as the water level reached by flood flows with a predicted recurrence interval of 2.33 years.
Ordinary High Water Mark (OHWM)	Defined by the U.S. Army Corps of Engineers as the line on the bank established by the fluctuations of water indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

~~**Orographic**~~	~~The effect that occurs when an air mass is forced from a low elevation to a higher elevation as it moves over rising terrain. The air mass cools, its relative humidity increases, and clouds may form.~~
Outfall	The end of a pipe or culvert that delivers local drainage into a creek. Features associated with an outfall structure may include erosion control materials, such as rip rap or an energy dissipater below the culvert. Further, a valve, such as a flap gate, may also be part of the outfall.
Overhanging Growth (OHG)	Vegetation growth that is hanging over maintenance roads and fence lines. Routine pruning of overhanging growth is a vegetation management activity.
Paleontological Resources	Fossilized remains or traces of prehistoric organisms.
Palustrine	Marsh-like.
Perennial Plant	A long-lived plant that typically has well-developed roots and above-ground structures. May include herbaceous plants, vines, shrubs, and trees.
Perennial Stream	A stream that has continuous flow of surface water throughout the year in a typical year.
Permanent Wetland Impact	A direct impact in which the wetland is not restored to pre-project conditions within 2 years.
Pervious Hardscape	Hardscape, such as rock rip rap, gabions, and cellular soil confinement, that is not a barrier to water infiltration and that may allow (limited) revegetation growth.
Plant Pathogen	Any organism that causes plant disease.
PM10	Particulate matter less than 10 microns in diameter, which can be inhaled and cause health issues.
PM2.5	Particulate matter less than 2.5 microns in diameter, which consists of fine particles that can penetrate deep into the lungs.
Policy	A principle of action guiding decision-making, both for individual stream maintenance projects and for the implementation of other related programs and projects. Policies are commitments made by Valley Water's Board of Directors.
Porter-Cologne Act	California law regulating water quality, enforced by Regional Water Boards.
Post-Emergent Herbicide	An herbicide designed to control target plant material after it has sprouted or following a dormant period. Post-emergent herbicides control plants by disrupting various growth mechanisms.
Preconstruction Survey	A review of the existing conditions of a site prior to the beginning of construction activity.

Pre-Emergent Herbicide	An herbicide designed to control target plant material prior to germination. Pre-emergent herbicides are applied to the soil surface, watered in through rainfall or artificial irrigation, and prevent germination and growth of seeds in the upper soil strata.
Preservation	The setting aside of an existing site to protect a resource or prevent the decline of a resource through legal or physical mechanisms. Preservation does not result in a gain of resource area or function.
Preventative Maintenance (PM)	Work activities that are conducted on a regular schedule (most often annual or biannual) to avoid facility degradation.
Permanently Mitigated Area (PMA)	An area where impacts for a particular activity were mitigated for in perpetuity during SMP-1. Work of the same activity done under the Program Renewal (SMP-3) within the PMA does not incur additional mitigation debt.
Program	A series of actions that can be described at a general level of detail. Programs include agency plans, policies, and regulatory programs.
Project Area	The area within Santa Clara County that is subject to routine Stream Maintenance Program activities. The project area includes streams and any adjacent property that Valley Water owns or for which it holds an easement for access and maintenance. Valley Water does not provide maintenance on private property when no easement exists.
Protocols	An established set of ground rules or procedures governing routine stream maintenance activities.
~~**Pruning**~~	~~The systematic removal of branches of a plant, usually a woody perennial.~~
Pub. Res. Code (Public Resources Code)	California code containing regulations related to natural resources, including environmental and fire safety standards.
Qualified Biologist	A qualified biologist is a professional biologist with a minimum of a Bachelor's degree in biology, ecology, botany, zoology, or a related discipline and at least one year of experience as a professional biologist involving a substantial amount of field work (an appropriate Master's degree with a substantial field component may substitute for work experience). The qualified biologist's education and experience will be appropriate to the species and task that they are working on.
Reach	The smallest subdivision of a drainage system consisting of a uniform length or a discrete portion of a channel.
Recharge	The replenishment of groundwater aquifers by infiltration.

Re-establishment	Manipulation of a site with the goal of returning natural/historic functions. Re-establishment results in rebuilding former resources and results in a gain in resource area and function.
Regrowth	The growth of vegetation following disruptive activities, such as trimming of vegetation or sediment removal.
Rehabilitation	Manipulation of a site with the goal of repairing natural/ historic functions. Rehabilitation results in a gain in resource function but does not result in a gain in resource area.
Residual Impact	Significant environmental impact that cannot be avoided through the implementation of feasible site-specific measures. A significant residual impact can be offset through provision of compensatory mitigation.
Restoration	Valley Water's Board of Directors has adopted the following definition, "Action taken by Valley Water, to the extent practicable, toward the re-establishment of an ecosystem's pre-disturbance structure, function, and value, where it has been degraded, damaged, or otherwise destroyed." The re-establishment of the structure and function of an ecosystem to a former or degraded site. Ecological restoration is the process of returning an ecosystem as closely as possible to pre-disturbance conditions and/or functions and values. Implicit in this definition is that ecosystems are naturally dynamic. It is therefore not possible to recreate a system exactly. The restoration process reestablishes the general structure, function, and dynamic but self-sustaining behavior of the ecosystem.
Revetment	A term used to describe any number of hard structures used in bank stabilization.
Riprap	Loose rock or concrete of varying size, typically brought to a site. Used to protect channel banks from scouring forces.
Riparian	Located along the edge of a channel, generally on the floodplain. Characterized by access to and influence of the channel, but not in it. A riparian zone or riparian area is the interface between land and a river or stream.
Riparian Corridor	A biological zone dominated by riparian vegetation immediately next to a channel. See also "Riparian Vegetation."
Riparian Vegetation	The trees and other vegetation normally found on the stream banks and flood plains associated with streams, lakes, or other bodies of water.
Riverine	Of, related to, or growing in rivers and streams.
Rootwad	A tree stump (dead or alive) with roots. May be used during restoration activities.

Routine Stream Maintenance	Routine stream maintenance includes five main activities, as follows: (1) sediment removal activities that are designed to restore the design flow conveyance capacity of existing Valley Water channels or associated features (e.g., tide gates); (2) vegetation management in and around ~~the~~ Valley Water's channels, including removal of vegetation for access and fire control; (3) bank stabilization activities necessary to protect Valley Water or other facilities; (4) downed tree management (including large woody debris); and (5) management of animal conflicts. Routine stream maintenance also includes more minor maintenance activities, such as trash removal; fence work; access road maintenance; repair of structures with in-kind materials within the same footprint (such as replacement of concrete linings, culverts, pipes, valves, or similar structures); cleaning and minor sediment removal at stream ga<u>u</u>ges, outfalls, flap gates, tide gates, fish ladders; and graffiti removal. Routine maintenance does not include emergency work.
Routine Stream Maintenance Project	For the purposes of the Stream Maintenance Program, a routine stream maintenance project is the whole of a routine stream maintenance action that is proposed for implementation through the Stream Maintenance Program. A project has a specific location, duration, and purpose. (An example of an individual project would be the removal of 3,000 cubic yards of sediment from Adobe Creek between Highway 101 and East Charleston Road.) Major construction and repair, including CIP projects, are not defined as routine stream maintenance projects. In the Stream Maintenance Program, also referred to as "individual stream maintenance project," "individual project," "stream maintenance project," and "project."
Ruderal	Vegetation containing mostly introduced, weedy herbaceous species; "disturbance-loving" species. Common in disturbed areas, along roadsides or in vacant lots.
Runoff (Surface)	The flow of water across the land surface and in stream channels. Occurs only after the local storage capacity of the landscape has been exceeded and includes both overland flow and streamflow.
Salmonid	Any member of the fish family Salmonidae.
Senate Bill (SB) 32	Senate Bill 32 expands on AB 32, requiring California to reduce GHG emissions to 40 percent below 1990 levels by 2030, among other requirements.
Scour	The clearing and digging action of flowing air or water, especially the downward erosion caused by stream water in removing material (e.g., soil, rocks) from a channel bed or bank or around in-channel structures.

Secondary Channel	For purposes of the Stream Maintenance Program, secondary channels are constructed features of a main channel that are designed with flood conveyance or maintenance purposes. These channels often have maintenance requirements that are different than the main channel and are therefore specifically managed and reported separate from the main channel.
Section 404	Refers to a section of the Clean Water Act establishing a permit program for the discharge of dredged or fill materials into Waters of the United States.
Sediment	Particles derived from rocks or biological materials that have been transported by a fluid, or solid material suspended in or settled from water.
Sediment Basin	A depression formed by the construction of a barrier or dam built at a suitable location to retain rock, sand, gravel, silt, or other material. Valley Water commonly refers to these basins as "Debris Basins."
Sediment Load	Sediment that is in transport. "Load" is a general term that refers to material in suspension and/or transport; it is not synonymous with discharge.
Sediment Removal	The act of removing sediment deposited within a stream. Typically, sediment is removed when it reduces capacity. This is the sediment removal activity referred to most often in the Stream Maintenance Program and included in the program-level impact analysis. There is a subset of sediment removal that is conducted for removing sediment 25 cubic yards or less. This latter category of sediment removal is considered "minor maintenance," as described in Chapter 3 of the Stream Maintenance Program Manual.
Sensitive Habitat	A general term used to characterize habitats that either support sensitive species (listed species, species proposed for listing, and species of special concern) or are designated as a sensitive natural community in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.
Sensitive Species	A general term for listed (i.e., on a state or federal endangered species list) species, species proposed for listing, and species of special concern (other species that may be of concern to state or federal agencies).
Serpentine Soil/Habitat	A soil formed by the hydration and metamorphic transformation of ultramafic rock, in particular serpentinite, from the Earth's mantle. Serpentine habitat is typically host to a number of unique or rare plant species.

Shaded Riverine Aquatic (SRA) Habitat ~~(SRA)~~	The aquatic area occurring along the edge of a channel where the adjacent bank is composed of natural materials and supports riparian vegetation that overhangs or protrudes into the water and provides fish and other aquatic species habitat.
Shear Stress	The force tending to cause deformation of a material by slippage along a plane or planes parallel to the imposed stress.
Shrub	Woody plant smaller in height than a tree (less than approximately 16 feet [5 meters] at maturity), often formed by a number of vertical or semi-upright branches arising close to the ground.
Significant Environmental Impact	A significant environmental impact is a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (CEQA Guidelines Sections 15358 and 15382).
Significant Rainfall	Local rainfall 0.5 inches or greater within a 24-hour period in the subject watershed, below the 1,000-foot contour (Program Renewal Area).
SMP-1	Valley Water's previous Stream Maintenance Program for 2002-2012.
SMP-2	Valley Water's current ~~previous~~ Stream Maintenance Program for 2013-2023~~6~~.
SMP-3	Valley Water's proposed ~~current~~ Stream Maintenance Program for 2027-2036. Also referred to as "Program Renewal."
Soft Structures	A type of bank stabilization structure incorporating biological materials, such as seeds, plants, plant parts (e.g., root wads), or a combination of vegetation and inert materials (e.g., brush mats/sills, wattles, fascines, or branch packing/layering).
Softscape	Earth channels or levees, either natural or modified that generally do not incorporate hardscape structures. Also refers to "soft forms of bank stabilization" such as root wads and log structures. See also "Hardscape" and "Hybrid."
Stakeholder	An individual or organization affected by or with an interest in the Stream Maintenance Program. Stakeholders include regulatory agency representatives, municipalities, and environmental, advocacy, community, and business groups.
Stewardship	The careful and responsible management of the environment and natural resources in one's care for the benefit of the greater community.

Stream	For the purposes of the Stream Maintenance Program, "streams" are defined as the natural watercourses and modified channels within Valley Water's jurisdiction. In this Program, streams include both the waterway and its immediate geographical corridor, including riparian corridors.
Stream Maintenance Program (SMP)	A multi-year program providing long-term guidance to Valley Water to effectively implement routine stream maintenance projects in a cost-effective and environmentally sensitive manner. The Stream Maintenance Program is to be codified in a process and policy document that can be adopted by Valley Water and utilized in obtaining long-term permits from regulatory agencies. The Stream Maintenance Program includes specific measures, protocols, and monitoring and reporting requirements to achieve the above objectives.
Stream Maintenance Project	For the purposes of the Stream Maintenance Program, a project is the whole of a set of routine stream maintenance actions that are along the same channel reach. A project has a specific location, duration, and purpose.
Streambed	The part of a stream over which a column of water moves.
Suitable Habitat	Habitat that features ecological characteristics that may provide for the breeding and or foraging of a species.
Surfactants	A shorthand term for surface-active agent, which are chemicals that modify surfaces of two liquids or a liquid and a solid. In the context of the Stream Maintenance Program, surfactants are used in combination with herbicides to increase the retention and penetration of herbicides on and into plants.
Suspended Sediment	Fine particles suspended in the water column and carried along with the water at the velocity of flow. Compare with "Bedload."
Take (of a Listed Species)	To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a listed species or its habitat, or to attempt to engage in any such activity.
Temporary Impact	A direct impact that does not result in permanent or long-lasting effects, such as areas of impact that are substantially restored to pre-impact conditions within 1-2 years.
Thalweg	Main channel in the creek.
Tree	A species of woody perennial that typically has one dominant vertical trunk and a height greater than 15 feet in its natural, mature form. Several exceptions to this definition exist, willows and elderberries are two examples found in the Stream Maintenance Program area which are considered trees for purposes of the Program, but which may not have a single dominant trunk.

Turbidity	The pollution of water by dissolved or suspended solids. The cloudiness of water, caused by suspended sediment. Turbidity is measured by the degree to which light penetration is blocked because the water is muddy or cloudy.
Unavoidable Impact	An unavoidable impact would occur if specific economic, social, legal, technical, or other considerations make mitigation measures or alternatives for the impact of a project infeasible. When such impacts are considered "significant," to support its decision on a project for which an EIR was prepared, a Lead Agency must prepare written findings that identify that either: (1) changes to the project are within another agency's jurisdiction and have been or should be adopted; or (2) specific economic, social, legal, technical, or other considerations make mitigation measures or alternatives infeasible (CEQA Guidelines Section 15091). In addition, the Lead Agency must adopt a Statement of Overriding Considerations that describes how the benefits of the project outweigh the unavoidable adverse environmental effects (CEQA Guidelines Sections 15092, 15096(h)).
Unmodified Channel	Channels that generally are unchanged from historic conditions. Unmodified channels may have small areas of modification, including bridges, outfalls, culverts, gauges, or other appurtenant structures. See also "Natural Channel."
Unvegetated	Areas containing either no, or only ruderal, vegetation.
Unrevetted	Without revetment (i.e., a bare slope or channel side without hardscape protection).
Upland	Areas above the normal reach of streams or rivers and characterized by non-wetland vegetation.
Upper Watershed	Generally, the steeper portion of a watershed, above reservoirs and above urban areas.
Vegetation Management/ Removal	Removal of vegetation in and adjacent to Valley Water facilities in alignment with one of the Stream Maintenance Program's vegetation management purposes.
Vegetation Removal <6 inches dbh	The complete removal of above-ground portions of any individual plant or tree with a diameter at breast height less than 6 inches. Cut stump treatment or foliar herbicide is a paired activity with vegetation removal <6 inches dbh and is assumed to occur unless otherwise noted on the work order.
Waste Discharge Requirement	A legal mechanism of the State Water Resources Control Board and Regional Water Quality Control Boards to regulate discharges of dredge or fill materials.
Waters of the United States	Tidal waters, all interstate waters, including wetlands, and all other waters including tributaries to streams and rivers which could involve interstate or foreign commerce.

Watershed	Entire area that drains to a common stream, synonymous with drainage area. Valley Water's streams are typically divided into five watersheds: Lower Peninsula, West Valley, Guadalupe, Coyote, and Pajaro.
Wetlands	Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are characterized by having the appropriate plant species (dependent on or capable of surviving root saturation), the appropriate hydrology (predictable saturation), and soils reflecting saturation and periodic anaerobic conditions.
Winterization	The process to maintain project sites with the appropriate best management practices (BMPs) 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 inch or greater of rainfall within 24 hours in the subject watershed. Winterization shall be completed, when feasible, prior to the occurrence of such actual significant rainfall.
Woody Debris	Fallen trees or branches in streams that can affect flow, sediment transport, and aquatic habitat.
Woody Vegetation	Live vegetation having a stiff trunk or branch structure that is inflexible and does not bend over in flows. Typical vegetation types include trees and large shrubs.
Work Sites	The locations where maintenance activities are anticipated to occur. For the Program Renewal, such locations have been identified for the 2027-2036 timeframe.

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The Santa Clara Valley Water District (Valley Water) has developed the Stream Maintenance Program (SMP) Update (Program Renewal) to review existing SMP activities, revise the SMP Manual, and renew necessary SMP permits. The Program Renewal is considered a "project" for the purposes of the California Environmental Quality Act (CEQA).

Valley Water has prepared this draft subsequent environmental impact report (DSEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of implementation of the Program Renewal. This DSEIR was prepared in compliance with CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). Valley Water is the lead agency for the Program Renewal.

ES.2 PROGRAM OVERVIEW

The Program Renewal has been prepared to provide guiding policies, specific direction on approach, and regulatory authorization for routine stream maintenance activities. The Program Renewal would update the existing SMP which supported the 10-year planning period from 2012-2022 and extensions, as necessary, to meet Valley Water's new conditions or maintenance needs. The Program Renewal (including the 2027-2036 SMP Manual [**Appendix A**] and this CEQA document) is intended to cover the 10-year planning period beginning in 2027 and ending in 2036. These documents are intended to fully replace the original documents that guided the SMP from its inception through 2026. The 2027-2036 SMP Manual (included as Appendix A to this DSEIR) and the contents of the DSEIR are meant to be read as companion volumes. The DSEIR references or summarizes detailed information (including figures and tables) presented in the 2027 SMP Manual frequently to avoid repeating information.

ES.2.1 PROGRAM OBJECTIVES

The overall flood management goals of the Program Renewal are to maintain the flow conveyance capacity of Valley Water flood protection facilities to reduce flood risks and ensure public safety, and to maintain the structural and functional integrity of Valley Water flood protection facilities and lands.

To meet these goals, the Program Renewal would prioritize and administer maintenance activities to achieve the following objectives:

- Remove the necessary sediment to provide flow conveyance and safety while maintaining habitat functions in creek systems;
- Manage vegetation to maintain access, flow conveyance, flood protection, and public safety in Valley Water's channels and right-of-way. Vegetation management is also

conducted to reduce fire fuel loads and wildfire risk and preserve the structural integrity of flood protection facilities. Vegetation management may also be conducted to promote overall ecological health, improve habitat for sensitive species, maintain restoration sites, and promote stewardship.;

- Manage vegetation to allow levee inspections and provide inspection visibility and access to maintenance work sites;
- Stabilize eroding stream and channel beds and banks to protect existing infrastructure, maintain public safety, reduce sediment loading, protect water quality and protect habitat values; and
- Avoid, minimize or mitigate impacts on the environment by identifying and prioritizing when maintenance work is necessary and incorporating stream stewardship measures to further reduce potential impacts and enhance ecologic function where possible.

The Program Renewal also seeks to obtain and maintain multi-year programmatic permits to regulate maintenance activities.

ES.2.2 PROGRAM BACKGROUND

Valley Water is responsible for water supply, flood protection, and stream stewardship in Santa Clara County, California. Valley Water generally performs routine maintenance work where it owns property in fee title, has an easement, or has maintenance obligations pursuant to effective rights of entry, licenses, and agreements. Valley Water flood protection facilities require maintenance to maintain the designed function of each facility. Historically, Valley Water has implemented these activities as needed. Therefore, the Program Renewal would be a continuation of past routine creek maintenance activities in most of the same areas using many of the same techniques. The difference between stream maintenance conducted before the SMP (pre-2002) and the initial SMP period (2002–2012) is the Program Renewal's comprehensive approach to managing and tracking the maintenance work and costs, monitoring environmental conditions, and providing program mitigation. The Program Renewal would be used by Valley Water staff to conduct routine stream maintenance practices in an efficient, consistent, and environmentally sensitive manner.

The requirements and policies of the original SMP document were finalized in 2002, when Valley Water completed CEQA review requirements and received authorizations from all the permitting agencies with jurisdiction over the program. Work under the first version of the SMP Manual (referred to as "SMP-1"), began in 2002, while work under the first subsequent SMP (referred to as "SMP-2"), began in 2012. In 2021, Valley Water initiated the third iteration of the SMP (the Program Renewal) to: (1) review SMP activities and revise the SMP Manual, (2) update its environmental compliance documentation, and (3) renew necessary SMP permits to guide the on-going program.

ES.2.3 PROGRAM RENEWAL AREA

The Program Renewal Area includes Santa Clara County below the 1,000-foot elevation contour in both the Santa Clara Valley basin and Pajaro River watershed. However, Valley Water does not work in all channels and creeks below the 1,000-foot contour but maintains a much smaller subset of channels and streams. Maintenance activities are generally limited to locations where Valley Water has land rights or has maintenance obligations pursuant to

effective licenses and agreements, approximately 333 miles of creeks and channels. **Figure ES-1**, below, provides a map of the Program Renewal Area.

Local governments within the Program Renewal Area in which Valley Water-owned or maintained channels exist include the cities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and the towns of Los Altos Hills and Los Gatos, as well as the County of Santa Clara.



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MONTROSE ENVIRONMENTAL

Figure ES-1: Program Renewal Area

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Program Channel Types

Streams within the Program Renewal Area are generally classified by two types, as either a modified channel or an unmodified channel.

In the previous SMP-2 Manual and based on input received from regulatory agencies, Valley Water included a third channel type referred to as "Modified Channel with Ecological Value." Upon review, it became clear that additional channel designation created redundancy issues for work notification procedures, potential impact assessments, and other implementation tasks. Therefore, Valley Water has reverted the channel classifications to the original two types: modified or unmodified. Channels classified as modified channel with ecological value in the previous SMP-2 Manual are now classified as a modified channel. These two channel types are described in more detail in Chapter 2, "Project Description".

The Program Renewal would not cover maintenance activities at reservoirs, dams, pipelines outside of stream corridors, groundwater percolation facilities, in-stream summer dams, or work in stream reaches above the 1,000-foot elevation contour.

ES.3 PROGRAM DESCRIPTION

ES.3.1 OVERVIEW OF PROGRAM RENEWAL APPROACH

Based on the work performed during the 2012-2022 period, Valley Water has developed projections for work reasonably anticipated to occur over the duration of the Program Renewal (2027-2036). The estimated work projections identify the potential creek and maintenance activities by watershed. Although general maintenance needs have shown a relatively consistent pattern historically, projections of future stream maintenance activities are not intended to represent the exact extent or volume of work that may occur.

Actual stream maintenance activities vary from year-to-year, depending on weather and hydrologic conditions, frequency and extent of past maintenance activities, and budget/ funding availability. Future maintenance needs may occur, consistent with overall Program Renewal projections, but they may vary from the specific locations originally projected. Some maintenance activities, such as bank stabilization, cannot be reasonably projected because they happen in response to hydrologic events and a variety of site-specific factors.

Although the Program Renewal work projections provide an overview of expected maintenance needs over the period 2027–2036 (as described above), maintenance needs in any given year would reflect a variety of factors. Each year, Valley Water develops an annual work plan that identifies the locations, lengths, and areas for the given year's proposed maintenance activities. This information is then provided to overseeing regulatory agencies in an annual Notice of Proposed Work (NPW). Additional details about the NPW are provided below in the *Annual Work Cycle* section.

ES.3.2 ADAPTABILITY

As a program the SMP was designed and intended to be adaptable, and updated and modified over time as conditions require or improvements are found. One way the current renewal can improve the Program is by achieving the Program's maintenance goals together with identifying opportunities where more natural resources can be left undisturbed or enhanced.

As conditions allow and technologies and environmental regulations evolve, keeping the Program adaptable can lead to making changes in work activities to further reduce potential impacts.

In addition, annual post-maintenance meetings, or "lessons learned" meetings, are planned so that Valley Water and resource agencies' staff can evaluate the effectiveness of both the resource protection and the maintenance methods used. These evaluations would be used to update BMPs and SMP processes to create a greater understanding of how to accomplish environmentally sensitive and fiscally-sound maintenance work.

ES.3.3 MAINTENANCE ACTIVITIES

The Program Renewal involves six main categories of work activities, all of which were included in SMP-2: vegetation management, sediment removal, bank stabilization, downed tree management, management of animal conflicts, and minor maintenance. Descriptions of these maintenance activities are provided below, and additional details are provided in the SMP Manual Chapters 4-9 (Appendix A).

Vegetation Management

Vegetation management is conducted to maintain the hydraulic and operational functions of Valley Water's flood protection system channels; maintain access to Valley Water facilities; maintain the structural integrity of Valley Water flood protection facilities and lands; maintain defensible space around Valley Water's facilities and reduce fire fuel loads and wildfire risk; and improve overall public safety. In addition, vegetation management is conducted at restoration sites, to promote overall ecological health improvements in the Program Area through invasive plant management, corrective pruning, coppicing (i.e., the cutting of a woody plant to ground level), and other vegetation management activities. Vegetation management activities conducted routinely throughout the Program Area include pruning, vegetation and tree removal through both hand or mechanical means, herbicide application, mowing, coppicing, and grazing. Vegetation management also includes non-native invasive plant management, corrective pruning, and fuel reduction to improve the ecological health of Valley Water facilities and promote stewardship.

While not previously covered under SMP-2, as part of the Program Renewal, management of hazard trees (i.e., pruning, and removal) has been incorporated into the Program Renewal. Removal of hazard trees may be needed to ensure public safety along Valley Water channels, access roads and ramps. Hazard trees may include dead or dying trees, dead parts of live trees, or unstable live trees (due to structural defects or other factors) that are within striking distance of people or property (a target) and may cause injury or damage.

Valley Water's preference is to first thin or prune trees before considering tree removal. However, when tree removal is necessary based on a careful evaluation conducted by Valley Water staff, native trees are given a higher level of consideration for preservation than nonnative trees unless a public safety issue is present. Valley Water will compensate for tree removal where required within the riparian habitat (see Section 3.4, "Biological Resources," for a discussion on riparian tree removal). Chapter 4 of the SMP Manual (Appendix A) describes Valley Water's tree removal activities and considerations in detail.

Sediment Removal

Sediment removal is the act of mechanically removing excessive sediment that has deposited within a flood protection channel. Sediment removal is required when accumulated sediment reduces a channel's flow conveyance capacity, prevents facilities or appurtenant structures from functioning as intended, or impedes fish passage and access to fish ladders, and/or blocks access to Valley Water facilities. Sediment is removed to restore channel capacity and minimize the flood risk in accordance with the existing channel design (as available). Sediment removal under the Program Renewal does not include increasing a channel's cross-sectional area or capacity beyond the as-built channel design or maintenance baseline.

Sediment to be removed from Valley Water's channels and facilities would be assessed according to the Sediment Characterization Plan established for the SMP. Sediment characterizations would be conducted to determine the physical and chemical properties of the removed sediment using continuous core, discrete sampling, and residual sampling methods.

Collected sediment that meets wetland reuse criteria could be transferred to the South Bay Salt Pond Restoration Project or other environmental enhancement and restoration projects. Sediment that did not meet these standards but met standards for landfill disposal would be disposed at a local landfill. Sediment that exceeded hazardous waste criteria would be disposed at an appropriate hazardous waste facility (e.g., Kettleman Hills hazardous waste landfill). Valley Water may also dispose of sediment in upland reuse sites. Sediment from Program Renewal projects that is being reused will meet the sediment standards of the site where it is being reused.

While sediment removal is a projected work activity, the estimated projections may not reflect the actual maintenance work conducted. The annual sediment removal need varies yearly according to precipitation, hydrologic, and geomorphic conditions in the Program's channels and watersheds. Over the next 10-year Program Renewal period, estimated sediment removal activities include 58 miles of creeks or channels in the Program Renewal Area.

Valley Water will seek to establish new permanent mitigation areas (PMAs) within these sediment removal areas as part of the Program Renewal compensatory mitigation package.

Bank Stabilization

Stabilizing and repairing eroding stream channel banks, levees, and streambeds is a routine SMP activity. Based on the maintenance work conducted from 2014 to 2020, Valley Water stabilized a total of 1.7 miles of channel banks. This equates to an average of about 0.24 mile of channel bank or levee repairs per year. Although bank stabilization is routine and expected, the specific work locations are not certain until after each winter season. As a result, this type of maintenance (unlike sediment removal and vegetation management) is not a work activity with annual projections. Rather, bank stabilization maintenance needs are assessed annually on an as-needed basis. Mitigation for impacts of bank stabilization projects, if any, is also determined on an annual basis depending on the identified work need and potential resources affected.

The list of suitable SMP bank stabilization treatments has generally not changed since the last program update (SMP-2). These techniques are described in detail in the SMP Manual

(Appendix A). Site-specific conditions will help Valley Water determine which method is the most appropriate for the given situation. Valley Water favors the use of soft bank stabilization approaches that use softer bio-technological approaches and first considers these methods for use prior to consideration of more hardened techniques.

Downed Tree Management

Downed tree management refers to the management of downed or fallen trees and logs in Valley Water facilities. In some cases, downed trees may create a risk of flooding by causing debris to collect and block flows, or a risk of erosion by directing flows against channel banks or levees. There are also circumstances in which downed trees may function as a risk to public safety or a fire hazard, or in which downed trees block access to Valley Water facilities or make it impossible to properly inspect facilities. These and other situations can result in a need to relocate, modify, or remove downed trees. However, some downed trees may provide ecological function. Downed tree management therefore seeks to accommodate both the need to maintain Valley Water facilities and protect public safety and the ecological functions that downed trees may provide.

Downed trees in streams may provide specific benefits to salmonids. Downed trees located in streams that support salmonids and which meet the criteria of being below ordinary high water, being greater than 12 inches in diameter, and being greater than 6 feet in length are referred to as Large Woody Debris (LWD). Because of LWD's specific ecological value as a salmonid habitat feature, LWD management follows a particular set of procedures which are described in detail in the SMP Manual (Appendix A).

In the previous iteration of the SMP, LWD was described in its own chapter and other downed tree management was categorized under minor maintenance. The movement of these activities into the downed tree management category will allow Valley Water to manage downed trees in a more holistic and strategic manner. For more information regarding downed tree management, please see Chapter 9 of the SMP Manual (Appendix A).

Management of Animal Conflicts

Animals can damage Valley Water facilities by burrowing into levees or channel banks, foraging on revegetated mitigation sites, and/or interfering with Valley Water's work activities. To protect the structural integrity of Valley Water's facilities and to reduce conflicts with species living in sites where work is needed, maintenance work is conducted to repair Valley Water facilities damaged by animals.

Management of animal conflicts refers to the use of avoidance tactics, biological control, physical alterations, habitat modification, live trapping, and fumigation to reduce conflicts between Valley Water facilities and local species. Valley Water uses a range of approaches to maintain a safe work site environment, including the use of biological controls, levee compaction, filling burrows with soil or slurry, installing physical barriers like chain-link fencing above OHWM, and habitat modification through vegetation management, bird nest deterrence, nonlethal trapping, and fumigation.

As part of the Program Renewal, this category of work has been expanded to include bat exclusion activities within Valley Water's Upper Llagas Creek Flood Protection Project's high-

flow bypass tunnel. Bat exclusion measures may include installing one-way mesh exits that allow bats to leave but not return to the tunnel.

Minor Maintenance

Minor maintenance includes fence repairs, access road maintenance (such as grading, adding aggregate, and restoring contours), trash and debris removal, removal of small downed trees (not in a salmonid creek or less than 12 inches in diameter and less than 6 feet), minor sediment removal (25 cubic yards or less, limited to within 100 feet of structures such as outfalls, access ramps, flap gates, culverts, and bridges), ongoing maintenance of restoration sites (including irrigation systems), maintenance of structures like stream gauges, minor erosion repairs above OHWM (including grading small areas beyond the top of the bank to improve drainage and reduce erosion), and other minor maintenance activities needed to maintain Valley Water facilities. This category of work also includes in-kind replacement of structures within the same footprint (e.g., culverts, pipes, creeks-in-pipes, replacement of concrete linings, or similar structures), in-kind bank repairs (ensuring hardscape and softscape facilities are replaced with similar materials, respectively), and routine maintenance of fish ladders (e.g., removal of sediment, debris, or algal growth impairing functionality). Additionally, it includes removing obstructions, trash, and debris near structures (e.g., bridges, outfalls, tide gates, and streamflow measuring stations, within 100 feet upstream and downstream) to ensure proper functioning.

As part of the Program Renewal, the category of minor maintenance has been expanded to include trash boom maintenance, routine work at maintenance yards, floodwall maintenance (e.g., graffiti removal, addition of protective coatings, and periodic repairs to prevent erosion), maintenance of the Palo Alto Flood Basin tide gates (located at the confluence of Matadero Creek and Adobe Creek), maintenance of fish ladders that are not associated with a diversion, and maintenance of passive flood barriers (e.g., along Lower Penitencia Creek). For additional details about Valley Water's minor maintenance activities, see Chapter 8 of the SMP Manual (Appendix A).

Activities Not Covered in the Program Renewal

The Program Renewal would not include the following activities, which are therefore not analyzed in this DSEIR:

- Emergency[1] repair work;
- Maintenance work that would increase the flow conveyance or water supply capacity of a facility beyond the designed conveyance channel capacity (as-built design);
- Maintenance work in stream reaches that are above the 1,000-foot elevation contour;
- Maintenance work for dams, reservoirs, and other water supply facilities, such as canals, pipelines outside of stream corridors, groundwater percolation ponds, and instream summer dams (maintenance of these facilities will have environmental coverage outside of SMP-3);

[1] A situation is considered an "emergency" if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resources Code Section 21060.3).

- Installation or major modification of fish ladders;
- Maintenance work conducted on private property by owners or other agencies (with the exception of urgent flood protection work described in Section 1.4.9 of the SMP Manual (See Appendix A);
- Maintenance work performed by other agencies; and
- Maintenance associated with capital improvement projects (CIPs) or large construction projects (e.g., projects outside the scope of SMP per-project limits) (see exceptions below).

For future CIPs, Valley Water would evaluate the construction and long-term operations and maintenance impacts in the environmental review documents. The CIP environmental review analysis may include a discussion of anticipated operations and maintenance activities that have already been mitigated under the SMP (where PMAs have been established). These PMAs are specific to the work location and channel cross section, work activity type, work acreage and scope of work. Permanently mitigated work activities and qualifying areas in future CIPs may be performed under the Program Renewal.

Long-term routine maintenance needs associated with CIPs will be evaluated for their potential coverage by the SMP. Valley Water will identify whether such activities would be covered under existing PMAs or would require additional mitigation. CIPs with maintenance activities not covered by the SMP would need to obtain separate authorizations.

ES.3.4 ANNUAL WORK CYCLE

SMP maintenance activities that are required to be reported through the Notice of Proposed Work (NPW) process occur on an annual cycle and generally occur in three phases. In the winter and early spring, maintenance needs are assessed and prioritized, the annual maintenance work plan is developed, and regulatory agencies would be notified through an NPW document submitted by Valley Water. During the summer and early fall, maintenance projects are implemented. Toward the end of the year and into the following winter, the Annual Summary Report (ASR) is developed, distributed to regulatory agencies, and Valley Water staff and managers typically meet with regulatory agencies to review the past year's work. These work phases are described in more detail below. Note that some SMP activities are not required to be reported through the NPW process.

Phase 1: Annual Maintenance Activity Identification and Development of NPW

During the winter and early spring, Valley Water staff would finalize its review of flood protection facilities and channels inspected to identify and prioritize maintenance needs. Maintenance work may be proposed either as part of the annual NPW or as identified throughout the year by individual Valley Water staff work orders. By April 15 of each year, Valley Water would notify the relevant regulatory agencies (i.e., those agencies with jurisdictional authority or oversight) of the year's planned maintenance projects. The relevant regulatory agencies would be provided with information describing proposed maintenance activities, locations, natural resource conditions, and any other key resource issues in the NPW. The NPW would describe which ground-disturbing maintenance activities would result in impacts on wetlands or waters of the U.S. and state as well as riparian habitat. The NPW also describes in detail Valley Water's proposal for providing compensatory mitigation for those impacts.

Some activities, such as most minor maintenance projects or opportunistic invasive plant removal projects, do not require advance notification through the NPW process. In these cases, appropriate resource protection measures and BMPs would be identified, and work would be allowed to proceed. In contrast, for other maintenance activities, a more detailed review process would occur and may include a site assessment and/or engineering evaluations. These activities would be reviewed to verify they were covered under the long-term regulatory clearances provided in conjunction with the Program Renewal. If the work was not covered by the Program Renewal, the appropriate project development process would be followed, and may include individual CEQA review and project-specific regulatory permits or clearances. For covered activities, appropriate resource protection measures and BMPs would be identified and added to the work order. For maintenance activities requiring compensatory mitigation, mitigation needs would be planned and described in the NPW. Pre-maintenance meetings would be held with appropriate Valley Water staff to discuss site-specific requirements, environmental constraints, and applicable BMPs. It may be necessary for Valley Water to submit a subsequent NPW in a given year, if late-season rains occur or other factors arise out of Valley Water's control.

Phase 2: Implementation of Program Renewal Activities

While some Program Renewal maintenance activities, such as certain minor maintenance, downed tree management, and vegetation management activities, may be conducted around the year in some circumstances, other Program Renewal maintenance activities would be implemented during the summer and fall season (as described in Chapter 2, *Project Description*). In addition, field monitoring of maintenance work (e.g., inspections of BMPs) would occur for both sediment removal and bank repair activities. Field monitoring would include inspections of BMPs so that they would be effective in preventing adverse impacts to water quality and stream habitats.

In general, sediment removal, instream vegetation removal involving ground disturbance, aquatic herbicide application, and bank stabilization work would be conducted between June 15 and October 15. If the fall season remains dry, work could continue until the first significant rainfall event and in accordance with the work windows outlined in Chapter 3 of the SMP Manual (Appendix A). A significant rainfall event is defined as local rainfall of 0.5 inch or greater within the watershed over a 24-hour period. Valley Water relies on weather forecasts to prepare for situations when significant rains are anticipated. In general, permits issued by regulatory agencies for the Program Renewal and/or mitigation requirements stemming from the CEQA analysis may also place additional limitations on work types and windows.

Phase 3: Annual Reporting with Regulatory Agencies

At the end of each year's maintenance season, an ASR would be developed and submitted to the appropriate regulatory agencies. This report would include a summary of the year's maintenance projects, describing what activities occurred and where, a description and confirmation of the restoration and mitigation activities implemented, and other SMP updates as necessary.

Following submittal of the ASR, regulatory agency staff would be invited to meet with Valley Water staff for an annual "lessons learned meeting" to be held in February or March of each year to evaluate the effectiveness of both resource protection and maintenance methods used in the preceding construction season. The information discussed at these annual lessons

learned meetings would be used to adaptively manage the BMPs and SMP processes to improve SMP effectiveness.

ES.4 PROGRAMMATIC IMPACT AVOIDANCE, MINIMIZATION, AND COMPENSATORY MITIGATION

The Program Renewal would incorporate the following overarching principles to protect natural resources and guide decision-making for stream maintenance activities and projects. Proposed program limits and BMPs (discussed in Chapter 2, *Project Description*) were developed to be consistent with these principles.

1. Avoid unnecessary intervention. Maintenance should only be done when it is determined to be necessary and appropriate to maintain conveyance, maintain the structural integrity of stream banks and beds, maintain access, protect public safety, or ecologically improve watershed ecosystems, streams, and/or other natural resources.

2. Consider the ecological system and its processes, including adjacent land uses, when determining maintenance necessity. If maintenance is necessary, then, before selecting sediment, vegetation or bank stabilization treatments, work to understand the channel system and its formative processes to know why the reach is functioning as it is. Established maintenance guidelines (MGs) are a method to document and centralize applicable information to be used to guide appropriate maintenance activities. Where channels are bordered by developed land uses, flood protection requirements may limit stream maintenance options. Maintenance activities will not increase the level of flood protection provided to surrounding lands as defined by as-built information for the reach, or increase the dimensions of an unmodified channel.

3. Seek maintenance solutions that minimize impacts on the environment. Implementing BMPs, work windows, work activity program requirements, Program Renewal limits, and incorporating geomorphic approaches when possible, can assist in minimizing impacts.

4. Integrate maintenance activities towards sustainability to reduce frequency of maintenance.

ES.4.1 AVOIDANCE OF SERPENTINE HABITATS AND PAYMENT OF NITROGEN DEPOSITION FEES

Sensitive serpentine-associated plant and animal communities exist in the Program Renewal Area along the Santa Clara Valley floor and foothills. These habitats support unique plant species, including serpentine-associated special-status species. To protect these ecosystems, Program Renewal activities will avoid maintenance in sensitive serpentine areas.

Since no direct impacts on serpentine habitats are expected, compliance with Valley Habitat Plan (VHP) conditions and impact fees for serpentine land cover types will not be required. However, due to the ecological sensitivity of these habitats and the rarity of special-status plants, Valley Water will mitigate potential residual impacts by paying VHP nitrogen deposition fees. These fees, through the Santa Clara Valley Habitat Agency's Voluntary Fee Payments Policy, address nitrogen emissions from maintenance vehicles and equipment. Further details on this mitigation measure can be found in Section 3.4, "Biological Resources."

ES.4.2 PROGRAM LIMITS AND BEST MANAGEMENT PRACTICES

In effort to minimize impacts resulting from maintenance activities, the Program Renewal includes the following limits:

- Coppicing would be limited such that no more than 20 percent overstory canopy removal is allowed in any stream reach, and at least 50 percent of the understory canopy of native vegetation would be retained.
- Removal of nonhazard trees 6-12 inches diameter at breast height (dbh) would be limited to 2,000 live trees between 2027 and 2036. On an annual basis, this work would be limited to 400 live tree removals per year. For each project, the Program Renewal would allow no more than 20 percent overstory canopy removal in any reach, and at least 50 percent of the understory canopy of native vegetation would be retained.
- Removal of nonhazard trees greater than 12 inches dbh would be limited to 150 live trees between 2027-2036. On an annual basis, this work would be limited to 20 live tree removals per year. For each project, no more than 20 percent overstory canopy removal would be allowed in any reach, and at least 50 percent of the understory canopy of native vegetation would be retained. Removal of trees greater than 12 inches dbh is a new activity under the Program Renewal that was not included in SMP-2.
- The Program Renewal's in-channel and non-in-channel herbicide application limits are based on gallons/pounds of product and are summarized in **Tables 2-7** and **2-8** in Chapter 2, *Project Description*. The per project limits would correspond to the product label restrictions per application.
- There is no limit to the number of sediment removal projects that may occur each year; however, a separation of 500 feet between sediment removal work sites is required and each project must comply with the quantitative objectives established by the MGs (where developed). Sediment removal in modified channels shall not exceed 5,000 linear feet for individual projects. Sediment removal in unmodified channels must be associated with a facility or human-made structure (i.e., bridge, outfall, gauge, or grade control) and shall not exceed 300 linear feet for individual projects. Valley Water may submit waiver requests for sediment removal projects that exceed the per-project limits; such requests must be reviewed and approved by appropriate regulatory agencies before commencing work.
- There is no limit to the total number of bank stabilization projects that may occur in a single year. The annual bank stabilization limit is one linear mile of channel; however, hardscape areas that are replaced with softscape or hybrid methods may exceed the per-project limits and will not be counted toward the annual maximum one-mile limit. In-kind bank stabilization projects will not be counted toward the annual maximum one-mile limit. A separation of 250 feet between bank stabilization repair sites is also required to ensure that each repair has independent utility. Valley Water may submit waiver requests for bank stabilization projects that exceed the per-project limits; such requests must be reviewed and approved by appropriate regulatory agencies before commencing work.
- For downed tree management activities in channels supporting anadromous salmonids, up to 200 cubic yards of large woody debris (LWD) cutting and removal work would be allowed during the 2027-2036 period. This 10-year limit does not apply to downed tree removal activities required for fish passage or those associated with removal of debris jams/trash rafts as these efforts would result in a water quality benefit.

- Animal conflict management activities involving surface compaction and filling of burrows above OHWM will not exceed 42 linear miles during the 2027-2036 period.
- For minor maintenance activities, individual projects shall not exceed 0.08 acre of wetland/riparian vegetation impacts. Project reporting is required for minor maintenance projects that result in 0.01 acre or more of wetland/riparian vegetation impacts or any activity where dewatering is performed. The annual limit for minor maintenance projects is 0.5 acre of wetland/riparian vegetation impacts. The 5-year program limit is 2 acres of wetland/riparian vegetation impacts, and the 10-year program limit is 4 acres of wetland/riparian vegetation impacts.

In addition to the above-described program limits, Valley Water implements BMPs, which include standard practices and impact avoidance measures that would minimize potential environmental impacts. BMPs presented in **Table 2-10** of Chapter 2 are also included in the SMP Manual (Appendix A). These measures are implemented prior to, during, and post maintenance operations.

BMPs are implemented to avoid or minimize impacts to water quality and include measures and procedures to identify site or maintenance constraints, such as biological or cultural resource surveys. They protect and enhance existing habitat, protect maintenance workers and the public from equipment hazards, and provide specific and detailed guidance on vegetation management procedures, sediment removal activities, and bank stabilization techniques implemented by Valley Water. BMPs also include procedures for animal management activities and application of pesticides.

ES.4.3 COMPENSATORY MITIGATION

The Program Renewal includes many impact avoidance and minimization approaches and measures that have been developed, implemented, and revised since the SMP was initiated in 2001. Additionally, the SMP includes several BMPs, specifically targeted to the Program's maintenance work activities to further avoid or minimize potential impacts. However, in instances where impact avoidance and minimization measures on their own are not adequate to offset potential Program impacts, the SMP includes a compensatory mitigation approach which builds on the 25-year history of providing compensatory mitigation as part of Valley Water's SMP. Valley Water provides on-going compensatory mitigation activities as part of the routine operation and implementation of the SMP. The compensatory mitigation approach is summarized in this section to provide a general understanding and context on how Valley Water's on-going mitigation activities were considered during the evaluation of potential Program impacts and the development of CEQA mitigation measures within this DSEIR. The following paragraphs briefly describe the compensatory mitigation approaches used during SMP-1 and SMP-2, and the updated approach for the Program Renewal planning period.

Background on SMP-1 and SMP-2 Mitigation Approaches

Under SMP-1, Valley Water established PMAs for certain in-channel maintenance activities to offset impacts to wetlands and waters of the U.S./state. Specifically, PMAs were established for sediment removal, removal of vegetation less than 6 inches dbh, and in-channel herbicide application activities conducted during SMP-1. Where PMAs were established, those specific activities were mitigated for in perpetuity. In addition, where sediment removal PMAs were established during the SMP-1 period, future impacts to vegetation less than 6 inches dbh and

wetlands on the sediment within the same sediment removal footprints were also permanently mitigated for. During the SMP-1 planning period (2002-2011), Valley Water mitigated work activities in perpetuity through a combination of land acquisition, habitat protection and wetland restoration/creation activities. SMP-1 mitigation projects are summarized in the Program Renewal Manual (Appendix A).

Under SMP-2 (2011-2022), Valley Water adjusted its approach to include more on-site and off-site mitigation activities based on annual work needs in addition to seeking additional PMAs. Under the SMP-2 approach, Valley Water provided and continues to provide compensatory mitigation for impacts to wetlands/other waters on an annual basis using the following three approaches:

1. **On-site and Off-site Ecologic Services-based Mitigation**: This included invasive plant management, native plant revegetation, removal of trash and pollutants from encampment activities, concrete removal, and rehabilitation of encampment-related excavated banks.

2. **Land-acquisition-Based Mitigation**: This included using remaining credit from completed SMP-1 mitigation projects and creation of new land acquisition-based projects.

3. **Species-specific Mitigation**: This approach included gravel augmentation and building instream complexity features.

Toward the latter half of the SMP-2 period (2019-2022), Valley Water moved toward a strategy of prioritizing multi-benefit mitigation sites. For example, along Calera Creek, Valley Water conducted sediment removal over a large area to make sure there was capacity in the reach to allow long term vegetation establishment, removed some existing large invasive trees, and installed a large revegetation site. Valley Water also implemented a mitigation project on Saratoga Creek which included a combination of rehabilitating a bank that had been altered by others through compaction and construction of dirt bike ramps, trash removal and removal of concrete fragments in the channel.

During SMP-2, Valley Water primarily mitigated for impacts to salmonid habitat features through the construction of projects that installed LWD, gravel, and/or instream complexity features in the same watershed. Valley Water also constructed one fish passage improvement project on Stevens Creek at Evelyn Avenue. However, this project was not successful and therefore the mitigation was not applied to any SMP-2 impacts.

Program Renewal Mitigation Approach

For the Program Renewal, Valley Water proposes a strategy that includes a return to the overall focus toward establishing permanent mitigation for impacts to wetlands and waters of the U.S./state via the establishment of new PMAs. Because the existing SMP-1 PMAs provide permanent mitigation, no additional mitigation is required along reaches where PMAs for maintenance activities have already been established.

To determine future mitigation needs, Valley Water will quantify Program impacts on biological resources, such as the acreage of impacts to wetlands and riparian habitats, sensitive communities, and special-status species' habitats, on an annual basis as work is performed from 2027–2036. Valley Water will tally the impacts of Program activities for a

specific year at the end of each year. These impact calculations will then be used as the basis for determining mitigation to be provided at either that year's end or the following year. This annual analysis will clearly distinguish where activities occurred (e.g., in a PMA versus in new areas for which mitigation is required).

Valley Water will establish new PMAs for Program Renewal maintenance activities that result in permanent impacts to wetlands and waters of the U.S./state for: (1) different maintenance activities occurring along reaches that have existing activity-specific PMAs, and (2) any maintenance activities occurring along reaches without any existing PMAs (including new channel areas incorporated into the program). The goal is that, over time, Valley Water will establish PMAs along channels that are likely to require ongoing vegetation removal below top of bank and/or sediment removal. Under the Program Renewal, Valley Water will create new PMAs in areas outside existing PMAs.

PMA mitigation opportunities would create, establish, and/or provide suitable mitigation to address permanent impacts associated with annual repeated maintenance activities. Opportunities to provide suitable and high-quality mitigation to address the potential impacts to the channel's functions and values could occur through restoring existing Valley Water habitats or restoring or improving other watershed lands, or non-Valley Water maintained creeks, or other natural resources. Mitigation would be provided in perpetuity as it was for PMAs established during SMP-1.

Although this approach is similar to the PMA approach in SMP-1, the Program Renewal would develop additional PMAs that would target a smaller subset of high priority channels that require repeated annual maintenance and do not currently have PMA status.

The Program Renewal mitigation approach also plans to use remaining and available mitigation credit from mitigation projects established during SMP-1 to mitigate for new permanent impacts (i.e., Island Ponds, Pajaro Freshwater Wetland, and Landings project). Additionally, the Program Renewal mitigation approach would rely on the VHP, which is currently being amended[2] and expected to be considered for approval in 2026, and the associated VHP In Lieu Fee (ILF) Program. The ILF Program is used to compensate for unavoidable impacts on Waters of the U.S. and Waters of the State and federally-listed anadromous fish. Specifically, the Program Renewal would comply with VHP conditions, pay impact fees in accordance with the types and acreage of habitat, and implement VHP-specified conservation measures. Obtaining potential coverage under the VHP could be a component of the proposed mitigation package, provided that the VHP's ILF program would make enough credits available for Valley Water to purchase to be able to compensate for Program Renewal impacts to regulated habitats and VHP-covered species. Incidental take approval for VHP-covered federally listed species will be provided via the VHP for VHP-covered activities and species. Where take of state- or federally-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis.

Before the VHP is amended, if residual impacts from maintenance activities remain significant under CEQA with the implementation of Valley Water's BMPs, Valley Water will

[2] The VHP amendment includes the addition of new covered species, updates to the conservation strategy, adding the Program Renewal as a covered activity, expanding the VHP area boundary, and more.

provide compensatory mitigation for impacts on biological resources, as discussed in Section 3.4.4, "Impact Analysis" under Mitigation Approach.

Except for using remaining mitigation from mitigation projects established during SMP-1, it may be several years before Valley Water is able to fully implement these mitigation options due to the large scale of some of the mitigation projects and the time involved for completing the plan design and the permitting process for the projects. Accordingly, similar to the SMP-2 approach, providing mitigation on an annual basis for Program Renewal maintenance activities will likely be necessary while these longer-term approaches are developed. Valley Water's proposed approach for providing mitigation on an annual basis would be met through the following: (1) encampment cleanup and bank rehabilitation, (2) a grant program to fund projects by local watershed groups and homeless community services, and (3) trash removal and additional mitigation options. These options are described in the subsections below and incorporated into some of the EIR mitigation measures in Section 3.4, "Biological Resources." Additional compensatory mitigation for impacts to sensitive species are described in Section 3.4, "Biological Resources.

To address impacts on the riparian corridor, Valley Water may develop reach characterization sheets for areas where frequent maintenance activities are projected to occur in the next 10-year Program Renewal periods. These characterization sheets would be utilized to describe biological resources, water quality conditions, and overall ecological function within a channel reach; ongoing and future maintenance needs; and whether potential restoration opportunities exist within a reach. The characterization sheets may also be used to identify and map large trees with high importance and ecological value and describe potential opportunities for enhancing these trees. Reach characterizations could include descriptions of methods for maintaining individual reaches in a manner that has a neutral or positive effect on the reach's habitat function, therefore avoiding a need for separate compensatory mitigation.

Encampment Clean-up and Bank Rehabilitation

In recent years, Valley Water has observed a dramatic increase in encampment-generated, trash, debris, hazardous pollutants, and encampment-caused wildfires on Valley Water-managed creeks, channels, and lands. Collectively, the removal of riparian vegetation (both intentionally during creation and "maintenance" of encampments and unintentionally because of dumping of trash and trampling) and the abundance of trash are perhaps the most readily noticeable environmental issues in creeks throughout many of the urban and suburban areas of Santa Clara County. The growth of encampments and trash have led to increased and substantial water quality and habitat impacts to the region's streams and flood protection channels. Fires originating at encampments have also resulted in the loss of extensive riparian habitat.

Valley Water may conduct encampment cleanup activities to compensate for habitat impacts. Encampment cleanup includes removing human-caused inorganic trash that is in, or positioned to enter, aquatic and riparian habitats. This would provide mitigation for impacts associated with vegetation management, sediment removal, and bank stabilization activities. Chapter 10 the SMP Manual (Appendix A) discusses proposed mitigation ratios for each impact type.

Valley Water may also repair and rehabilitate stream banks and floodplains impacted by encampment-related excavation as mitigation for temporary or permanent bank stabilization impacts.

Grant Program to Fund Projects by Local Watershed Groups and Support Homeless Community Services

Valley Water is also considering developing a local grant or partnership program to help fund and implement watershed improvement projects led by local nonprofit agencies and Resource Conservation Districts (RCDs) and to help fund unhoused community services. Such a program may annually fund mitigation projects that are directly tied to the specific activities resulting in water quality impacts under the Program Renewal. Example projects that this program may support include habitat restoration, erosion control, and water quality improvement projects in the Program Renewal Area. Chapter 10 the SMP Manual (Appendix A) discusses proposed mitigation ratios for each impact type.

In addition, because the abundance of trash is one of the primary water quality issues in northern Santa Clara County's creeks, much of which is associated with unauthorized encampments, the grant program may also provide financial support to unhoused community services. Such services may include housing, employment, vocational services, mental health and recovery programs, and other related support services. By supporting such services, Valley Water would indirectly improve creek water quality by helping the unhoused community find more permanent housing solutions and move the unauthorized encampments out of Valley Water's creeks. Water quality would be improved due to the removal of trash, debris, and hazardous pollutants. There would be less obstructions to fish passage, and there would be less damage to fish and wildlife habitats.

Trash Removal

Trash removal work that occurs outside of encampment clean-up activities may serve as mitigation for vegetation removal and sediment removal activities that would result in impacts to wetlands/other waters of the U.S./state. Removing trash helps improve water quality and aquatic habitat for plant and terrestrial species. Chapter 10 the SMP Manual (Appendix A) discusses proposed mitigation ratios for each impact type.

Additional Mitigation Options

In addition to the annual mitigation approaches described above, this section describes additional mitigation options that may be implemented on an annual basis for Program Renewal activities. These measures are incorporated into some of the EIR mitigation measures in Section 3.4, "Biological Resources." These options may be implemented in addition to PMAs and the payment of VHP fees (if/when the VHP amendment is adopted) for the duration of the 10-year Program Renewal period, to allow flexibility. See Chapter 10 of the SMP Manual (Appendix A) and the Mitigation Monitoring and Reporting Program (MMRP) for additional details.

- **Revegetation**. As in SMP-2, this involves conducting revegetation activities to compensate for the loss of quality and quantity of riparian habitat resulting from SMP impacts. A typical planting palette, plant list, and proposed mitigation ratios are described in the SMP Manual (Appendix A).

- **Concrete Removal**. The removal of concrete would expand wetlands and/or waters of the U.S./state and will enhance riverine functions. This would provide mitigation for bank stabilization activities resulting in permanent impacts on wetlands/waters of the U.S./state.
- **Fishery Restoration Projects**. Valley Water envisions constructing one or more large mitigation project(s) that involve restoration of salmonid habitat through passage improvement; installation of habitat features such as LWD, gravel, and instream complexity; or other methods to improve streams' function as salmonid habitat. This type of mitigation project would provide mitigation for downed tree management work involving removal of LWD in anadromous salmonid creeks and/or impacts to salmonid habitat features associated with bank stabilization and sediment removal projects in salmonid creeks. The Coyote 10B, Stevens Creek Evelyn Avenue Fish Passage, and Pickell's Dam Removal mitigation projects are examples of projects that restore salmonid habitat.
- **VHP Impact Fees and ILF Program**. Even if the Program Renewal would not be covered under the VHP during the initial years of the Program Renewal period, paying VHP fees would be appropriate to mitigate Program Renewal impacts to VHP-covered species because these fees would directly benefit covered species in the South Bay region. This mitigation approach is consistent with the Habitat Agency's Voluntary Fee Payments Policy. In the event that Valley Water needs to remove large invasive trees in VHP-covered areas and depending on the habitat value provided by such trees, Valley Water may also pay VHP impact fees for the acreage of land cover that is modified by invasive tree removal activities. For removal of noninvasive trees greater than 6 inches dbh, tree planting and/or payment of VHP impact fees would provide mitigation for tree removals. Purchase of ILF credits would provide mitigation for impacts to waters of the U.S./state and compensate for Program Renewal impacts to regulated habitats in addition to VHP-covered species. Where take of state- or federally-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis.
- ~~**Reach Characterizations.** To address impacts on the riparian corridor, Valley Water may develop reach characterization sheets for areas where frequent maintenance activities are projected to occur in the next 10-year Program Renewal periods. These characterization sheets would be utilized to describe biological resources, water quality conditions, and overall ecological function within a channel reach; ongoing and future maintenance needs; and whether potential restoration opportunities exist within a reach. The characterization sheets may also be used to identify and map large trees with high importance and ecological value and describe potential opportunities for enhancing these trees. Reach characterizations could include descriptions of methods for maintaining individual reaches in a manner that has a neutral or positive effect on the reach's habitat function, therefore avoiding a need for separate compensatory mitigation.~~
- **Post-Wildfire Recovery.** In situations where a large and destructive riparian wildfire occurs, Valley Water may propose restoration of ecosystem function following a wildfire as a mitigation option. Valley Water would submit the wildfire recovery plan as part of the NPW process and include a description of the mitigation proposal. Activities may include but are not limited to revegetation and hydroseeding to reduce erosion, invasive plant species control, road repair, and removing critical safety hazards (dead or dying trees) to promote and support habitat for animal and plant species. The plan will also describe success criteria, monitoring processes, and site maintenance.

ES.5 PERMITS, APPROVALS AND CONSULTATION REQUIREMENTS

Several federal and state regulatory agencies granted permits, approvals, and permit extensions to Valley Water to implement SMP-2 (for the 20134-2023 period), some of which expired in 2023 and 2024. Specifically, permits from the U.S. Army Corps of Engineers (USACE), Central Coast Regional Water Quality Control Board (CC RWQCB), and California Department of Fish and Wildlife (CDFW) expired on December 31, 2023. The biological opinion from National Marine Fisheries Services (NMFS) expired on April 8, 2024 and the biological opinion from U.S. Fish and Wildlife Service (USFWS) expired on April 15, 2024. The permit from the San Francisco Bay Conservation and Development Commission (BCDC) expires on April 30, 2026. The SF Bay RWQCB Section 401 Water Quality Certification did not include an expiration date and will be valid until the SF Bay RWQCB issues a new Order.

The same above-described agencies (with the exception of the SF Bay RWQCB) were asked to issue new or amended multi-year permits and approvals to authorize Valley Water to continue implementing the SMP between 2027 and 2036.

- USFWS confirmed that the change in expiration date did not change the effects analysis of jeopardy determination of their Biological Opinion and communicated that USACE can still request SMP projects to be appended to their Biological Opinion as needed (Griego 2022).
- USACE reinitiated consultation with NMFS on May 3, 2023, and NMFS prepared a Biological Opinion for a 3-year extension that is valid until December 31, 2026. USACE issued an extension of Regional General Permit 17 to December 31, 2026. Purchase of ILF credits would provide mitigation for impacts to waters of the U.S./state and compensate for Program Renewal impacts to regulated habitats in addition to VHP-covered species.
- Where take of federally-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis. Where take of state -listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, incidental take coverage would be provided via Incidental Take Permits from CDFW, on an as-needed basis.
- CDFW extended the Lake and Streambed Alteration Agreement to December 31, 2028. This LSAA was amended in September of 2024 to include explicit coverage of concrete removal mitigation items and salmonid habitat feature mitigation items in the Pajaro watershed, which had been described in the SMP-2 Manual, but not explicitly described in the LSAA.
- The CCRWQCB extended the Section 401 Water Quality Certification to December 31, 2026.
- BCDC granted an amendment that will expire on April 30, 2026, and Valley Water has applied for an extension through December 2026.

As CEQA responsible agencies, the state permitting agencies will utilize this SEIR (once it is certified) as the CEQA compliance document in issuing new permits once the extensions and amendments expire. If applicable, the USACE will use this SEIR as background information for Section 404 permit NEPA compliance, and the USFWS and NMFS will use this SEIR as background information for Section 7 consultation with the USACE once the extensions

expire. In addition to the permits and approvals mentioned above, state and local agencies would issue encroachment permits as needed to implement Program Renewal maintenance activities.

ES.6 PUBLIC INVOLVEMENT PROCESS

ES.6.1 SCOPING COMMENT PERIOD AND MEETING

In accordance with CEQA Guidelines (Section 15375), Valley Water circulated a Notice of Preparation (NOP) of a DSEIR for the Program Renewal on May 27, 2022 (**Appendix B**). The NOP for the Program Renewal was circulated to the public; to local, state, and federal agencies; and to other interested parties. The purpose of the NOP was to inform responsible agencies, trustee agencies, and the public that the Program Renewal could have significant effects on the environment and to solicit their comments. Comments received in response to the NOP were considered during preparation of this DSEIR (Appendix B).

To provide the public, as well as responsible and trustee agencies, an opportunity to ask questions and submit comments on the SMP and the scope of the DSEIR, Valley Water held a public scoping meeting on June 16, 2022, at 5:45 p.m. at the Valley Water Headquarters Building Boardroom and via Zoom during the public scoping period. As described above, notices of the meeting were mailed to interested parties; in addition, scoping meeting information was published prior to the event on Valley Water's website:

https://www.valleywater.org/project-updates/stream-maintenance-program

Valley Water accepted verbal and written comments at the scoping meeting and accepted both written and electronic comments (via email) during the 30-day scoping period. During the scoping period, nine comment letters were received. These comments were considered in preparing this DSEIR and are summarized in Appendix B.

ES.6.2 PUBLIC AND AGENCY REVIEW OF THE DSEIR

This document is being circulated to local, state, and federal agencies and to interested organizations and individuals who may wish to review and comment on the report. Valley Water published a Notice of Availability of the Draft EIR on July 21, 2025, which marked the beginning of a 45-day public review period. Written comments or questions concerning this DSEIR should be directed to the name and address listed below. Submittal of written comments via e-mail (Microsoft Word format) will be greatly appreciated.

Santa Clara Valley Water District
Attention: Billy Williams
5750 Almaden Expressway
San Jose, CA 95118-3686
E-mail: bwilliams@valleywater.org
Subject Line: SMP Update EIR Comments

The DSEIR and appendices can be reviewed on any Valley Water business day between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday at Valley Water headquarters,

located at the address shown above, or on the Valley Water Web site at [https://www.valleywater.org/project-updates/stream-maintenance-program]. The DSEIR also will be available at the libraries listed below during their normal operating hours:

- Dr. Martin Luther King, Jr. Library; 150 E. San Fernando St.; San Jose, CA 95112
- Morgan Hill Public Library; 660 W. Main Ave.; Morgan Hill, CA 95037
- Palo Alto (Rinconada) Public Library; 1213 Newell Rd.; Palo Alto, CA 94303
- Cupertino Public Library; 10800 Torre Avenue; Cupertino, CA 95014-3207
- Milpitas Public Library; 160 N. Main Street; Milpitas, California 95035

ES.6.3 PREPARATION OF FSEIR AND PROJECT APPROVAL

Written and oral comments received in response to the DSEIR will be addressed in a Final Subsequent Environmental Impact Report (FSEIR), which will include all comments received, responses to each, and a reprint of the DSEIR, updated as appropriate in underline/~~strikeout~~ in response to the comments. After review of the FSEIR, Valley Water staff will recommend to the Valley Water Board of Directors whether to approve or deny the Program Renewal. The Board then will review the FSEIR, consider staff recommendations and public testimony, and decide whether to certify the FSEIR and approve or deny the Program Renewal.

If the Board approves the Program Renewal in spite of significant impacts identified by the FSEIR that cannot be mitigated, the Board must state in writing the reasons for its actions in a Statement of Overriding Considerations (Section Guidelines 15093[c]).

ES.7 AREAS OF KNOWN CONTROVERSY

CEQA Guidelines Section 15123 states that an EIR must identify areas of known controversy that might have been raised by other agencies, the public, or other stakeholders. Areas of communicated controversy related to the EIR identified in the EIR scoping process include, but are not limited to, the following:

- The need to comply with Assembly Bill 52, ensuring tribal cultural resources are considered, consulting with California Native American tribes, and conducting archaeological surveys if necessary.
- Potential construction impacts in Caltrans Right-of-Way (ROW), including noise, stream flow changes, and required mitigation measures.
- Ensuring ADA compliance for affected facilities, maintaining pedestrian and bicycle access, and securing encroachment permits for work within Caltrans ROW.
- Conducting hazardous materials surveys before demolishing buildings or structures, addressing lead-based paint, mercury, asbestos, and PCB caulk, and ensuring proper disposal in accordance with state regulations.
- Sampling imported soil or backfill to verify it is free from contamination.
- Confirming project activities within the County Habitat Conservation Plan Area comply with the County Planning Office geobrowser or Habitat Agency requirements.
- Providing notification before removing trees from County-owned land or within County ROWs.

- Evaluating direct and indirect impacts on waterbodies due to Program Renewal activities, ensuring protection of habitats, fish migration, and rare species.
- Providing a detailed project description in the SDEIR, including anticipated work frequency, crew sizes, construction schedule, lighting, noise, and traffic generation, to enable CDFW to assess potential environmental effects.
- Documenting discussions among Valley Water, CDFW, and other agencies on incorporating the program into the Santa Clara Valley Habitat Plan (HCP/NCCP), detailing proposed activities, affected land cover types, impact frequency, and mitigation measures.
- Clarifying the timeline for the Program Renewal in the SDEIR, addressing potential gaps in coverage.
- Identifying potential impacts on special-status species and outlining necessary mitigation measures, including habitat assessments, plant and wildlife surveys, species avoidance protocols, and required state or federal consultations.
- Addressing cumulative impacts from foreseeable future projects, assessing the significance of each impact, and ensuring habitat protection for special-status species.
- Considering actions to identify and mitigate encampments for the unhoused while preventing environmental degradation from human habitation.

These comments are addressed in the relevant resource topic sections of the analysis in Chapter 3, with NOP Response letters available in **Appendix B**.

ES.8 ISSUES TO BE RESOLVED

CEQA Guidelines Section 15123 calls for the lead agency to disclose issues to be resolved. Issues to be resolved for this DSEIR include the choice among alternatives and how to mitigate significant effects.

ES.9 SUMMARY OF IMPACTS

The impacts of the Program Renewal, proposed mitigation, and significance conclusions are discussed in detail in Chapter 3, *Environmental Setting and Impact Analysis,* and Chapter 4, *Other Statutory Considerations,* of this DSEIR. Table ES-1 at the end of this chapter summarizes the impacts, mitigation measures, and levels of significance identified in this document.

Environmental resources potentially affected by the Program Renewal include the following:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural and Paleontological Resources
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Geomorphology
- Noise
- Public Services and Utilities
- Traffic and Transportation
- Tribal Cultural Resources
- Water Quality
- Wildfire

ES.9.1 SIGNIFICANT AND UNAVOIDABLE IMPACTS

The following impacts have been identified as significant and unavoidable:

- Impact BIO-4: Interfere with the Movement of Any Native Resident, Migratory Species, Migratory Wildlife Corridors, or the Use of Native Wildlife Nursery Sites.
- Impact NZ-1: Temporary Exposure of the Public to Noise Levels in Excess of City or County Standards
- Impact NZ-2~~3~~: Generate Excessive Ground Vibration or Ground-borne Noise Levels.
- Cumulative Impact BIO-4: Cumulative Impacts on Movement of Any Native Resident or Migratory Species or Established Wildlife Corridors, or on Use of Native Wildlife Nursery Sites
- Cumulative Impact NZ-1: Cumulative Impacts from Substantial Temporary or Permanent Increase in Ambient Noise Levels or Substantial Incremental Increase in Noise Levels
- Cumulative Impact NZ-2: Cumulative Impacts from Ground Vibration or Ground-borne Noise Levels

ES.10 ALTERNATIVES CONSIDERED

Chapter 5 of this DSEIR, *Alternatives Analysis*, describes the alternatives considered in detail as well as alternatives considered but dismissed from further analysis. The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the proposed project that could feasibly attain most of the objectives of the proposed project while reducing or eliminating one or more of the proposed project's significant effects. The range of alternatives considered must include those that offer substantial environmental

advantages over the proposed project and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors.

The following alternatives have been evaluated for their feasibility and their ability to achieve most of the Program Renewal objectives while avoiding, reducing, or minimizing significant impacts identified for the Program Renewal:

- No Project Alternative
- Reduced Frequency Alternative
- Limited Work in Unmodified Channels Alternative
- Limited Activities Alternative

ES.10.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, Valley Water would pursue one of two options: (1) continue conducting maintenance activities, including CEQA compliance and project-by-project permitting on an annual basis, following practices under the existing SMP (SMP-2); or (2) seek to extend or renew existing SMP programmatic permits, following practices under the existing SMP and utilizing previous CEQA documentation. Valley Water would continue conducting the same maintenance activities under the existing SMP, using existing operations and maintenance guidelines and BMPs.

As described in Chapter 2, *Project Description*, some primary differences between this alternative and the Program Renewal are that the Program Renewal would include hazard tree management, the removal of trees greater than 12 inches dbh, additional minor maintenance work[3], updated work limits, and refinements to BMPs to reflect updated regulations and improved clarity. If project-by-project permitting was conducted under this alternative, the added maintenance activities, updated work limits and BMP modifications would be added on a project-by-project basis, as dictated by mitigation contained in CEQA compliance documents and the terms contained in annually renewed permits. The No Project Alternative could require Valley Water to conduct CEQA compliance and obtain permits on an annual basis, requiring more time and effort annually compared to the Program Renewal.

Because of the lead time needed to obtain regulatory permits, some needed maintenance likely would not be conducted during the same season in which the need for it was identified, resulting in the potential for failure to stabilize eroding stream and channel beds, maintain the design flow or provide appropriate conveyance capacity of facilities, consequently not meeting the Program's objectives. Therefore, it is likely that less maintenance work would be accomplished each year. If less sediment removal were to occur, sediment removal activities (such as truck trips for hauling and disposal/reuse) also would be reduced; however, the Program may fail to remove enough sediment to maintain flow conveyance and safety and therefore may not achieve the Program Renewal's objectives. If less vegetation management

[3] New minor activities that will be included in the Program Renewal include trash boom maintenance, routine work at maintenance yards, floodwall maintenance (e.g., graffiti removal, addition of protective coatings, and periodic repairs to prevent erosion), maintenance of Palo Alto Flood Basin tide gates, maintenance of fish ladders that are not associated with a diversion, and maintenance of passive flood barriers.

occurred, adequate flow conveyance through the channels could be compromised as well as public safety due to more of a possibility of flooding and wildfire risk. Additionally, under this alternative over the 10-year planning horizon (2027-2036), annual environmental compliance costs required for the No Project Alternative would be expected to be higher than the one-time compliance costs associated with the Program Renewal.

ES.10.2 REDUCED FREQUENCY ALTERNATIVE

Under the Reduced Frequency Alternative, the types of maintenance activities undertaken by Valley Water would not change, but the recurrence of sediment removal and vegetation management activities would occur less frequently than under the Program Renewal. However, bank stabilization, management of animal conflicts, and minor maintenance activities would continue to occur as needed. All other aspects of the Program Renewal (e.g., new/revised BMPs) would be implemented under this alternative.

Under the Program Renewal, the recurrence of activities is projected for a 10-year period and would be influenced by a variety of factors, including the type of maintenance activity, where that activity would occur (e.g., levee or bank; unmodified channel), and the site-specific factors at a particular location (e.g., rate of sediment accumulation or vegetation growth). The need for sediment removal or instream vegetation management typically would be based on field observations of reduced channel capacity from sediment accumulation or vegetation growth; non-instream vegetation management would be based on managing annual growth, including the removal of vegetation using both pre-emergent and post-emergent herbicides. Under the Reduced Frequency Alternative, the recurrence of sediment removal and vegetation management activities at any location would be half as frequent as under the Program Renewal. For example, if a stream reach was projected in the Program Renewal to need sediment removed in 4 out of 10 years, under the Reduced Frequency Alternative, sediment would be removed in 2 out of 10 years.

Although maintenance activities would occur less frequently, the amount of maintenance done during each event likely would need to be greater to fulfill maintenance needs. For instance, a greater amount of sediment removal or instream vegetation management would need to occur during a maintenance event to maintain the design flood flow conveyance capacity during the longer periods between maintenance episodes. A greater amount of non-instream vegetation management also would need to occur during a maintenance event, to address fire hazards on roads and levees associated with a greater amount of vegetation growth. Similarly, different types of maintenance may be necessary (e.g., removal of larger trees may require larger equipment).

ES.10.3 LIMITED WORK IN UNMODIFIED CHANNELS ALTERNATIVE

Under the Limited Work in Unmodified Channels Alternative (Limited Work Alternative), maintenance activities that could be done in unmodified channels would be limited to within 100 feet upstream and downstream of human-made structures, such as bridges, road crossings, stream gauges, outfalls, and trash racks. As a result, a reduced amount of annual maintenance would occur under this alternative. Maintenance near human-made structures would be necessary because it would keep these structures functioning properly and safely. Necessary maintenance activities in unmodified channels located away from human-made structures would not occur, resulting in increased flood risk or unaddressed maintenance

needs. All other aspects of the Program Renewal (e.g., the currently proposed BMPs) would be implemented under this alternative.

ES.10.4 LIMITED ACTIVITIES ALTERNATIVE

Under the Limited Activities Alternative, those maintenance activities with the greatest biological impacts would be eliminated or modified. For bank stabilization activities, no hardening of stream banks would be allowed and only "soft" stabilization measures would be used. For sediment removal activities, equipment would always be located at the top of the bank and would not be allowed in the stream channel. For vegetation management activities, no herbicide use would be allowed, and only mechanical vegetation management methods would be utilized. For management of animal conflicts, no herbicides or fumigants use would be allowed. Minor maintenance activities would be conducted as described under the Program Renewal. Relying on the alternative methods described above such as "soft" bank stabilization methods, operating equipment only from top of bank, and only using mechanical vegetation management methods would result in increased efforts to accomplish the same degree of necessary maintenance. Alternative methods also may result in higher implementation costs and/or less maintenance work getting accomplished each year.

ES.11 COMPARISON OF ALTERNATIVES AND THE ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Impacts of the alternatives are described in detail in DSEIR Chapter 5, *Alternatives Analysis*, and compared to impacts of the Program Renewal. Weighing the impacts on all resource areas and the ability to achieve project objectives, the Program Renewal is considered to be environmentally superior. Compared to any of the other alternatives, it strikes the most appropriate balance between managing flood risk, protecting the ecological integrity of the SMP channels, and addressing other short- and long-term impacts associated with maintenance activities.

Among the alternatives to the Program Renewal considered in this chapter, the Limited Activities Alternative is considered the environmentally superior alternative because by limiting the type of activities to remove hard stabilization techniques, only allowing equipment to operate from the top of bank, and not using herbicide or fumigants, it would reduce many impacts associated with these activities such as impacts on tribal cultural resources, transportation, noise, hazards, energy, biological resources, air quality, and aesthetics. However, this alternative would also be likely to impede sediment removal that would be necessary to maintain flood flow conveyance capacity. The need for repeat bank repairs could increase the impacts associated with such maintenance activities. Lastly, this alternative would result in increased effort to accomplish the same degree of necessary maintenance and also may result in higher implementation costs and/or less maintenance work getting accomplished each year. The other alternatives were not selected as the environmentally superior alternative for the following reasons:

- ***No Project Alternative***. Although this alternative would provide only a slight reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities, maintenance would not necessarily be conducted in a timely manner to avoid flood hazards. Furthermore, maintenance activities may not be implemented along with a

comprehensive mitigation approach and a consistent set of BMPs. Therefore, flood risk would be greater and, at the same time, more residual impacts would remain.

- ***Limited Work Alternative***. As a result of reduced maintenance activities in unmodified reaches, this alternative would promote the ecological structure and function of these reaches and, therefore, would reduce a variety of impacts related to the Program Renewal in those locations. However, this alternative would result in increased flood risk along unmodified channels and resulting impacts on downstream creek systems.
- ***Reduced Frequency Alternative.*** This alternative would lessen impacts on biological resources, as extended intervals between maintenance activities would provide ecosystems more time to recover their ecological structure and function, leading to a modest reduction in effects on wetland and riparian habitats. However, the longer gaps between maintenance would also result in increased sediment buildup and instream vegetation growth, causing a more pronounced temporary decline in conveyance capacity and limiting the ability to maintain the design flow or appropriate conveyance capacity of facilities. Additionally, the extended period between maintenance activities would allow more non-instream vegetation to grow unchecked, temporarily heightening fire hazards along roads and levees.

ES.12 SUMMARY OF IMPACTS AND LEVELS OF SIGNIFICANCE

Table ES-1 summarizes the impacts, mitigation measures, and levels of significance identified in this document.

Table ES-1. Summary of Potential Impacts and Mitigation Measures

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
Impacts				
3.2 Aesthetics				
AES-1:	Substantial Adverse Effects on Scenic Vista	LTS	None Required	LTS
AES-2:	Substantial Damage to Publicly Visible Scenic Resources, including but not Limited to Trees, Rock Outcroppings, and Historic Buildings Viewed from a State or Locally Designated Scenic Highway	S	MM BIO-12	LTSM
AES-3:	Substantial Degradation of the Existing Visual Character or Quality of the Site and its Surroundings in Non-	LTS	None Required	LTS

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	urbanized and Urbanized Areas.			
AES-4:	Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality in Urbanized Areas	LTS	None Required	LTS
AES-5:	Substantial Alteration to Day or Nighttime Views resulting from Additional Light or Glare	NI	None Required	NI
3.3 Air Quality				
AIR-1:	Conflict with or Obstruct Implementation of Applicable Air Quality Plans	LTS	None Required	LTS
AIR-2:	Temporary Increase in ROG, NOx, PM_{10}, and $PM_{2.5}$ Emissions during Maintenance Activities	LTS	None Required	LTS
AIR-3:	Expose Sensitive Receptors to Substantial Pollutant Concentrations (Diesel PM and Pesticides) during Maintenance Activities	LTS	None Required	LTS
AIR-4:	Creation of Objectionable Odors	LTS	None Required	LTS
3.4 Biological Resources				
BIO-1A:	Impacts on Serpentine-Associated Special-Status Plant Species	S	MM BIO-1: Pay Santa Clara Valley Habitat Plan Nitrogen Deposition Fees	LTSM
BIO-1B:	Impacts on Non-Serpentine-Associated Special-Status Plant Species	S	MM BIO-2: Create or Enhance and Preserve Mitigation Populations of Non-VHP-Covered Special-Status Plant Species	LTSM
BIO-1C:	Impacts on the Monarch Butterfly, Crotch's Bumble Bee, and Large Marble Butterfly	LTS	None Required	LTS

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
BIO-1D: Impacts on Steelhead	S	MM BIO-3: Augmentation of Spawning Gravel MM BIO-4: Augmentation of Instream Complexity MM BIO-5: Salmonid Habitat Restoration	LTSM
BIO-1E: Impacts on the Pacific Lamprey	S	MM BIO-3, MM BIO-4, MM BIO-5	LTSM
BIO-1F: Impacts on the Riffle Sculpin	LTS	None Required	LTS
BIO-1G: Impacts on Native, Special-Status Minnows (Hitch and Roaches)	LTS	None Required	LTS
BIO-1H: Impacts on Estuarine, Special-Status Fish (Longfin Smelt and Sturgeons)	LTS	None Required	LTS
BIO-1I: Impacts on Essential Fish Habitat and Species Subject to Fisheries Management Plans	LTS	None Required	LTS
BIO-1J: Impacts on the California Tiger Salamander, California Red-Legged Frog, and Foothill Yellow-Legged Frog	S	MM BIO-6: Avoid Impacts on California Tiger Salamander, California Red-Legged Frog, and Foothill Yellow-Legged Frog Habitat MM BIO-7: Compensatory Mitigation for Impacts on Habitat for the California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog, and Northwestern Pond Turtle	LTSM
BIO-1K: Impacts on the Northwestern Pond Turtle	S	MM BIO-7	LTSM
BIO-1L: Impacts on the California Horned Lizard, Santa Cruz Black Salamander, and California Giant Salamander	LTS	None Required	LTS
BIO-1M: Impacts on Nonbreeding Special-Status Birds	LTS	None Required	LTS
BIO-1N: Impacts on Certain Nesting Special-Status Birds	LTS	None Required	LTS

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
BIO-1O: Impacts on the California Ridgway's Rail, California Black Rail, Salt Marsh Harvest Mouse, Salt Marsh Wandering Shrew, and Alameda Song Sparrow	S	MM BIO-8: Island Ponds Mitigation	LTSM
BIO-1P: Impacts on the Western Snowy Plover, Swainson's Hawk, Tricolored Blackbird, Long-Eared Owl, Loggerhead Shrike, and San Francisco Common Yellowthroat	LTS	None Required	LTS
BIO-1Q: Impacts on the Least Bell's Vireo and Yellow-Breasted Chat	S	MM BIO-9: Compensatory Mitigation for Impacts on Least Bell's Vireo and Yellow-Breasted Chat Nesting and Foraging Habitats	LTSM
BIO-1R: Impacts on the Burrowing Owl	LTS	None Required	LTS
BIO-1S: Impacts on the Golden Eagle and Bald Eagle	LTS	None Required	LTS
BIO-1T: Impacts on the Yellow Warbler	S	MM BIO-10: Compensatory Mitigation Impacts on Yellow Warbler Breeding Habitat	LTSM
BIO-1U: Impacts on the San Francisco Dusky-Footed Woodrat	LTS	None Required	LTS
BIO-1V: Impact BIO-1V: Impacts on the Pallid Bat, Townsend's Big-Eared Bat, and Non-Special-Status Bats	S	Mitigation Measure BIO-11: Provide Alternative Bat Roost	LTSM
BIO-1W: Impacts on the San Joaquin Kit Fox	LTS	None Required	LTS
BIO-1X: Impacts on the Mountain Lion, American Badger, Ringtail, and Western Red Bat	LTS	None Required	LTS
BIO-1Y: Impacts on the Pacific Harbor Seal	LTS	None Required	LTS
BIO-1Z: Impacts on Non-Special-Status Animal Species	S	MM BIO-1 through MM BIO-5, MM BIO-7 through MM BIO-13	LTSM

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
BIO-1A: Impacts on the Bay Checkerspot Butterfly	S	MM BIO-1	LTSM
BIO-2A: Loss or Disturbance of Riparian Habitat, Including Sycamore Alluvial Woodland	S	MM BIO-12: Compensatory Mitigation for Impacts to Woody Riparian Vegetation	LTSM
BIO-2B: Loss or Disturbance of Non-Riparian/Non-Wetland Sensitive Plant Communities	LTS	None Required	LTS
BIO-3: A Substantial Adverse Effect on State or Federally Protected Wetlands and Waters through Direct Removal, Filling, Hydrological Interruption, or Other Means	S	MM BIO 13: Compensatory Mitigation for Permanent Impacts to Wetlands and Aquatic Habitats	LTSM
BIO-4A: Interference with Wildlife Movement	LTS	None Required	LTS
BIO-4B: Interference with the Use of Native Wildlife Nursery Sites	S	None Available	SU
BIO-5: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, such as a Tree Preservation Policy or Ordinance	LTS	None Required	LTS
BIO-6: Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional or State Habitat Conservation Plan	LTS	None Required	LTS
3.5 Cultural and Paleontological Resources			
CR-1: Adverse Effect on Known and Previously Undiscovered	LTS	None Required	LTS

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	Archaeological or Historical Resources			
CR-2:	Disturbance of Human Remains	LTS	None Required	LTS
CR-3:	Impacts to Sensitive Paleontological Resources	LTS	None Required	LTS
3.6 Energy				
ENE-1:	Result in a Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources	LTS	None Required	LTS
ENE-2:	Conflict With or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency	NI	None Required	NI
3.7 Greenhouse Gases				
GHG-1:	Generate GHG Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment	S	MM GHG-1: GHG Emissions Reduction Practices for Maintenance Activities MM GHG-2: GHG Emissions Mitigation Program	LTSM
GHG-2:	Conflict with an Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs	S	MM GHG-1, MM GHG-2	LTSM
3.8 Hazards and Hazardous Materials				
HAZ-1:	Create a Significant Hazard to the Public or Environment through the Routine Use, Transport, Disposal, or Accidental Release of Hazardous Materials	S	MM HAZ-1: Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever	LTSM
HAZ-2:	Impair Implementation of or Physically Interfere with an Adopted Emergency	LTS	None Required	LTS

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	Response Plan or Emergency Evacuation Plan			
HAZ-3:	Be Located on a Site Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Section Code 56962.5	LTS	None Required	LTS
HAZ-4:	Be Located on a Previously Undiscovered Contaminated Site	LTS	None Required	LTS
HAZ-5:	Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School	S	MM HAZ-1	LTSM
HAZ-6:	Create a Significant Hazard to Construction Workers or the Public Through the Exposure to Valley Fever During Construction Activities	S	MM HAZ-1	LTSM
3.9 Hydrology and Geomorphology				
HYD/GM-1:	Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such that the Project May Impede Sustainable Groundwater Management of the Basin	LTS	None Required	LTS
HYD/GM-2:	Substantially Alter the Existing Drainage Pattern of the Site or Area, Including Through the Alteration of the Course of a Stream or River or	LTS	None Required	LTS

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	Through the Addition of Impervious Surfaces, in a Manner Which Would: (i) Result in substantial erosion or siltation on- or off-site			
HYD/GM-2 (ii):	Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite	LTS	None Required	LTS
HYD/GM-2 (iii):	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems	LTS	None Required	LTS
HYD/GM-2 (iv):	Impede or redirect flood flows	LTS	None Required	LTS
HYD/GM-3:	Conflict with or Obstruct Implementation of a Sustainable Groundwater Management Plan	LTS	None Required	LTS
3.10 Noise				
NZ-1:	Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of the Proposed Maintenance Areas in Excess of City or County Standards or Generate a Substantial Incremental Increase in Noise Levels	S	MM NZ-1: Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards	SU
NZ-2:	Generate Excessive Ground Vibration or Ground-borne Noise Levels	S	MM NZ-1	SU
NZ-3:	Be Located within the Vicinity of a Private Airstrip or an Airport Land Use Plan or within Two Miles of a	NI	None Required	NI

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	Public Airport, and Expose People Residing or Working in the Project Area to Excessive Noise Levels			
3.11 Public Services and Utilities				
PSU-1:	New or Physically Altered Public Services Facilities, including Police, Fire, Parks, and Schools	LTS	None Required	LTS
PSU-2:	Relocated, New, or Expanded Utilities and Service System Facilities or Disruptions of Utilities and Service System Facilities including Storm Drainage, Electric Power, Natural Gas, or Telecommunications Facilities	LTS	None Required	LTS
PSU-3:	Effects on Wastewater Treatment Demand and Water Supply	LTS	None Required	LTS
PSU-4:	Exceedance of Landfill Capacity or Non-Compliance with Regulations Related to Disposal of Excavated Sediment or Other Materials	LTS	None Required	LTS
3.12 Traffic and Transportation				
TR-1:	Conflict With a Program, Plan, Ordinance, or Policy Addressing the Circulation System Including Transit, Roadway, Bicycle, and Pedestrian Facilities	LTS	None Required	LTS
TR-2:	Conflict with CEQA Guidelines Section	LTS	None Required	LTS

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	15064.3, Subdivision (b)			
TR-3:	Substantially Increase Hazards Due to Geometric Design Features and Incompatible Uses or Result in Inadequate Emergency Access	LTS	None Required	LTS
3.13 Tribal and Cultural Resources				
TCR-1:	Adverse Change in the Significance of Known and Previously Undiscovered Tribal Cultural Resources	LTS	None Required	LTS
3.14 Water Quality				
WQ-1:	Water Quality Degradation Resulting in Violation of Surface Water Quality Standards or WDRs; or Otherwise Substantially Degrade Surface Water Quality	LTS	None Required	LTS
WQ-2:	Water Quality Degradation Resulting in Violation of Ground Water Quality Standards; or Otherwise Substantially Degrade Ground Water Quality	LTS	None Required	LTS
WQ-3:	Create or Contribute Runoff Water that Would Provide Substantial Additional Sources of Polluted Runoff	LTS	None Required	LTS
WQ-4:	In Flood Hazard, Tsunami, or Seiche Zones, Risk Release of Pollutants Due to Project Inundation	LTS	None Required	LTS
WQ-5:	Conflict with or Obstruct Implementation of a	S	MM BIO-3, MM BIO-4, MM BIO-5	LTSM

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	Water Quality Control Plan			
3.15 Wildfire				
WF-1:	Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan	LTS	None Required	LTS
WF-2:	Exacerbate Wildfire Risks and Thereby Expose People or Structures to a Significant Risk of Loss, Injury, or Death; or Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire	LTS	None Required	LTS
WF-3:	Require the Installation or Maintenance of Infrastructure that may Exacerbate Fire Risk or Result in Temporary or Ongoing Impacts to the Environment	LTS	None Required	LTS
WF-4:	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	LTS	None Required	LTS
Cumulative Impacts				
AES-1:	Cumulative Impacts on Aesthetics	LTSM	MM BIO-13	LTSM
AIR-1:	Cumulative Air Quality Impacts	LTS	None Required	LTS
BIO-1:	Cumulative Impacts on Special-status Species	S	MM BIO-1, MM BIO-2, MM BIO-3, MM BIO-4, MM BIO-5, MM BIO-6, MM BIO-7, MM BIO-8, MM BIO-9, MM BIO-10, MM BIO-11	LTSM
BIO-2:	Cumulative Impacts on Riparian Habitat or	LTS	None Required	LTS

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
	Other Sensitive Natural Communities			
BIO-3:	Cumulative Effects on State or Federally Protected Wetlands and Waters	S	MM BIO-13	LTSM
BIO-4:	Cumulative Impacts on Movement of Any Native Resident or Migratory Species or Established Wildlife Corridors, or on Use of Native Wildlife Nursery Sites	S	None Available	SU
BIO-5:	Cumulative Effects of Conflicts with Local Policies or Ordinances Protecting Biological Resources, or Conflicts with the Provisions of an Adopted HCP, NCCP, or Other Approved Conservation Plan	LTS	None Required	LTS
CR-1:	Cumulative Effects on Cultural, Paleontological, and Tribal Cultural Resources	LTS	None Required	LTS
ENE-1:	Cumulative Impacts on Energy	LTS	None Required	LTS
GHG-1:	Cumulative Impacts of Greenhouse Gas Emissions	S	MM GHG-1, MM GHG-2	LTSM
HAZ-1:	Cumulative Impacts of Hazards and Hazardous Materials	S	MM HAZ-1	LTSM
HYD/GM-1:	Cumulative Impacts on Hydrology and Geomorphology	LTS	None Required	LTS
NZ-1:	Substantial Temporary or Permanent Increase in Ambient Noise Levels or Substantial Incremental Increase in Noise Levels	S	MM NZ-1	SU

	Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
NZ-2:	Cumulative Impacts from Ground Vibration or Ground-borne Noise Levels	S	MM NZ-1	SU
NZ-3:	Cumulative Impacts from Siting of Noise-sensitive Land Uses or Receptors in the Vicinity of a Private Airstrip, Airport Land Use Plan, or within Two Miles of a Public Airport	LTS	None Required	LTS
PSU-1:	Cumulative Effects on Public Services and Utilities	LTS	None Required	LTS
TR-1:	Cumulative Impacts to Traffic and Transportation	LTS	None Required	LTS
WQ-1:	Cumulative Effects on Water Quality	S	MM BIO-3, MM BIO-4, MM BIO-5	LTSM
WF-1:	Cumulative Impacts Related to Wildfire	LTS	None Required	LTS

[1] Definitions:

LTS	Less than Significant	S	Significant
LTSM	Less than Significant with Mitigation	SU	Significant and Unavoidable
NI	No Impact		

Source: Compiled by Montrose Environmental Solutions, 2025

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Chapter 1
Introduction

The Santa Clara Valley Water District (Valley Water) has prepared this Draft Subsequent Environmental Impact Report (DSEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects associated with implementing Valley Water's Stream Maintenance Program (SMP or Program) Renewal (also referred to as SMP-3 or Program Renewal). Valley Water has administered the SMP since 2001 to guide, manage, and conduct routine maintenance activities of streams, improved channels, and related flood protection facilities. This DSEIR was prepared in compliance with the requirements of the California Environmental Quality Act (CEQA) (as amended) and the CEQA Guidelines (California Code of Regulations [Cal. Code Regs.], tit. 14, Section 15000 et seq.). Valley Water is the lead agency for the Program under CEQA and has overall authority for approving the Program.

This DSEIR describes and summarizes the proposed actions of the Program Renewal in Chapter 2, *Project Description*, and analyzes environmental impacts and mitigation measures in the environmental resource sections in Chapter 3, *Environmental Setting and Impact Analysis*. More detail is provided in the SMP Manual, which is included in its entirety in **Appendix A**, *Stream Maintenance Program Manual 2027-2036*, of this DSEIR.

1.1 VALLEY WATER

Valley Water is a special district created by the State Legislature to act not only as Santa Clara County's (the County's) water wholesaler but also as its flood protection agency and the steward for its streams and creeks, underground aquifers, and reservoirs on which Valley Water holds land rights. Valley Water carries out its responsibilities in an environmentally responsible and cost-effective manner, led by a Board of Directors composed of seven members, each elected from geographical areas within the County.

As the County's water wholesaler, Valley Water ensures a dependable supply of clean, safe water for homes and businesses. As the agency responsible for local flood protection, Valley Water works diligently to protect Santa Clara Valley residents and businesses from the devastating effects of flooding. Valley Water's stream stewardship includes creek restoration and wildlife habitat projects, mitigation monitoring, stream maintenance, pollution prevention efforts, and a commitment to natural flood protection.

1.2 PROGRAM BACKGROUND

Valley Water is responsible for water supply, flood protection, and stream stewardship for approximately 333 miles of streams and channels in Santa Clara County, California, of which 185 miles are constructed and improved channels. Valley Water manages streams, canals, reservoirs, dams, pipelines, groundwater percolation facilities, and water treatment plants throughout the County to fulfill its responsibilities. Valley Water-managed flood protection

facilities require maintenance to ensure that the designed function of each facility is maintained. Prior to 2002, Valley Water conducted maintenance activities as needed. In 2002, Valley Water implemented SMP-1 as an ongoing program with an indefinite time horizon to guide routine maintenance activities within Valley Water's creeks and canals. The difference between stream maintenance conducted before the SMP (pre-2002) and SMP-1 (2002–2012) was the SMP's comprehensive approach to managing and tracking the maintenance work and costs, its monitoring of environmental conditions, and its approach of mitigating for the entire Program, rather than on an individual project basis. The SMP is used by Valley Water staff to ensure that routine stream maintenance practices are conducted in an efficient, consistent, and environmentally sensitive manner.

Although the SMP is an ongoing program, the SMP-1 Manual and final environmental impact report (FEIR), certified in 2002, used a 20-year planning horizon to forecast SMP activities and consider potential environmental effects. In 2011, Valley Water updated the Program and Manual to cover the second program period (2012-2022), which is referred to as "SMP-2" and involved renewing necessary SMP permits and environmental compliance documentation. A subsequent environmental impact report (SEIR) and FEIR were prepared for the SMP-2 update and the FEIR was certified in 2012.

A Notice of Determination for the SMP-1 and SMP-2 Update EIRs were filed on July 12, 2002, and February 14, 2012, respectively, with the State Clearinghouse (SCH Nos. 2000102055 and 2000102055, respectively), completing the CEQA review requirements for the SMP Update process. The requirements and policies of the SMP were finalized in 2002 and 2012 when Valley Water received authorizations from all the permitting agencies with jurisdiction over the program, as shown in Table 2-9 in Chapter 2, *Project Description*.

In 2023, Valley Water requested extensions from regulatory agencies for various SMP-2 permits that were set to expire in 2023. Valley Water received several permit extensions with variable expiration dates. Dates of the permit extensions are provided in Table 2-9 in Chapter 2, *Project Description*.

This Program update (including the updated SMP Manual and this CEQA document) is intended to cover the third 10-year planning period from 2027 through 2036. The permit extensions will cover the gap from 2023 through 2026. These updated Program Renewal documents are intended to fully replace the previous SMP-2 Manual and its supporting documents. In general, the Program Renewal is a continuation of past routine creek maintenance activities in the same areas, using many of the same techniques. The Program Renewal includes some updates to the Program, including the addition of new work activities and updates to the Program work limits. More details regarding the Program Renewal are provided in Chapter 2, *Project Description*.

The SMP Manual (included as Appendix A in this DSEIR) and the contents of the DSEIR are complementary volumes. As such, the DSEIR references or summarizes detailed information presented in the SMP Manual frequently to avoid repeating information. The reader is encouraged to review the SMP Manual while reviewing the DSEIR for more detailed information on the Program Renewal.

1.3 OVERVIEW OF CEQA REQUIREMENTS

CEQA is the cornerstone of environmental law and policy in California. CEQA's primary objectives are to (CEQA Guidelines Section 15002):

- Ensure that the significant environmental effects of proposed activities are disclosed to decision makers and the public;
- Identify ways to avoid or reduce environmental damage; prevent environmental damage by requiring implementation of feasible alternatives; and avoid, minimize, reduce and/or compensate for environmental impacts through implementation of mitigation measures;
- Disclose the reasons for agency approval of projects with significant environmental effects;
- Foster multidisciplinary interagency coordination in the review of projects; and
- Allow for public participation in the planning process.

With certain, strictly limited exceptions, CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. CEQA establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA's objectives. For example, the agency with decision-making authority (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If there is substantial evidence that the project would result in significant environmental impacts not capable of mitigation, CEQA requires that the agency prepare an EIR, analyzing both the proposed project and a range of feasible alternatives.

As described in CEQA Guidelines Section 15121(a), an EIR is an informational document that assesses potential environmental effects of a proposed project as well as identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts (CEQA Guidelines Section 15121). Other key CEQA procedural requirements include developing a plan to monitor implementation of adopted mitigation measures and carrying out specific public noticing and distribution steps to facilitate public involvement in the environmental review process. Public agencies with discretionary authority over a proposed project must consider the information in the EIR, along with any other relevant information, in making decisions on a proposed project.

1.3.1 CEQA Requirements for Subsequent EIRs

CEQA Guidelines Section 15162 indicate that a Subsequent EIR should be prepared when:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR;
  - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
  - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

CEQA Guidelines Section 15162 also states that a subsequent EIR shall be given the same notice and public review as required under Section 15087 and Section 15072. A subsequent EIR shall state where the previous document is available and can be reviewed.

Valley Water has determined that the previous SMP and related circumstances have changed substantially enough that the preparation of a subsequent EIR is appropriate. Specifically, the following types of changes to the SMP contributed to this decision:

- New maintenance activities are proposed (e.g., addition of hazard tree management, addition of the removal of trees greater than 12 inches diameter at breast height (dbh), and expansion of the minor maintenance work category and animal conflicts category).
- Updates to Program work limits are proposed.
- Updates to the Program's mitigation approach and refinements to the Best Management Practices (BMPs) are proposed.

In addition, several changes in the physical and regulatory environment have occurred, as follows:

- Several species are now listed as threatened or endangered under either the California or federal Endangered Species Act that were not listed in 2012, and several other non-listed species have been identified as special status species that were not special status species in 2012.
- The CEQA Guidelines were updated with additional requirements regarding the analysis of resources such as paleontological resources, global climate change, biological resources, tribal cultural resources, water resources, energy, wildfire, transportation, cultural resources, and hazardous materials.

1.3.2 Intended Use of this SEIR

Valley Water is the lead agency for the CEQA process and has discretionary review and approval authority for the project (CEQA Guidelines Section 15378). Valley Water will use the analyses presented in the SEIR and the public comments on them to evaluate the Program Renewal's environmental impacts. The Valley Water Board of Directors will be responsible for considering whether to certify the FSEIR and approve the Program Renewal.

This DSEIR has been prepared in accordance with CEQA to evaluate the environmental impacts of implementing the Program Renewal. In accordance with CEQA Guidelines Section 15126, this SEIR would be used as the primary environmental document for evaluating all subsequent discretionary planning and permitting actions for the project, as described in Chapter 2*, Project Description*, Section 2.9.

1.4 CEQA PROCESS

The following discussion explains the steps in the CEQA process for the Program Renewal.

1.4.1 Notice of Preparation

A Notice of Preparation (NOP) for the Program Renewal was prepared in accordance with the CEQA Guidelines Section 15082 and was circulated through the Office of Planning and Research's State Clearinghouse on May 27, 2022 (State Clearinghouse Number 2000102055). The NOP response period started on May 27, 2022, and continued for 30 days, concluding on June 27, 2022. The NOP presented general background information on the SMP, the scoping process, and the environmental issues to be addressed in the DSEIR. Copies of the NOP were distributed by mail and email to a broad range of stakeholders, including state, federal, and local regulatory agencies and jurisdictions, utilities, and interested individuals in the area. In addition, the NOP was published on Valley Water's website:

https://www.valleywater.org/project-updates/stream-maintenance-program

The NOP is included in this DSEIR in **Appendix B**, *Notice of Preparation and Comments Received*.

1.4.2 Scoping Comments and Meeting

To provide the public, as well as responsible and trustee agencies, an opportunity to ask questions and submit comments on the SMP and the scope of the DSEIR, Valley Water held a public scoping meeting on June 16, 2022, at 5:45 p.m. at the Valley Water Headquarters Building Boardroom and via Zoom during the public scoping period. As described above, notices of the meeting were mailed to interested parties; in addition, scoping meeting information was published prior to the event on Valley Water's website:

https://www.valleywater.org/project-updates/stream-maintenance-program

Valley Water accepted verbal and written comments at the scoping meeting and accepted both written and electronic comments (via email) during the 30-day scoping period. During the scoping period, nine comment letters were received. These comments were considered in preparing this DSEIR and are summarized in Appendix B.

1.4.3 Subsequent DEIR Distribution and Public Review Process

Valley Water prepared this DSEIR, as informed by public and agency input received during the scoping period, to disclose environmental impacts associated with the Program Renewal. Where any such impacts are significant, feasible mitigation measures and potentially feasible alternatives that would substantially lessen or avoid such effects are identified and discussed. The public review period allows the public an opportunity to provide input to the lead agency on the DSEIR.

The DSEIR is currently undergoing public review for 45 days. Valley Water will hold one public meeting to receive comments on the DSEIR on August 27, 2025, at 12:00 pm. The meeting will be held online (https://valleywater.zoom.us/j/89607301512. Webinar ID: 896 0 730 1512, Call-in: 1-(669) 444-9171). The meeting will begin with an overview of the Program and the analysis and conclusions set forth in the DSEIR. The introductory presentation will be followed by the opportunity for interested members of the public to provide comments to Valley Water on the DSEIR. Commenters may provide oral comments at the meeting.

For those interested, written comments or questions concerning the DSEIR can be submitted within the public review period via email (preferred) or mail to the name and address below:

Santa Clara Valley Water District
Attn: Billy Williams
5750 Almaden Expressway
San Jose, CA 95118
BWilliams@valleywater.org

The DSEIR and appendices can be reviewed on any Valley Water business day between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday at Valley Water headquarters, located at the address shown above, or on the Valley Water Web site at [https://www.valleywater.org/project-updates/stream-maintenance-program]. The DSEIR also will be available at the libraries listed below during their normal operating hours:

- Dr. Martin Luther King, Jr. Library; 150 E. San Fernando St.; San Jose, CA 95112
- Morgan Hill Public Library; 660 W. Main Ave.; Morgan Hill, CA 95037
- Palo Alto (Rinconada) Public Library; 1213 Newell Rd.; Palo Alto, CA 94303
- Cupertino Public Library; 10800 Torre Avenue; Cupertino, CA 95014-3207
- Milpitas Public Library; 160 N. Main Street; Milpitas, California 95035

1.4.4 Certification of the Final Subsequent EIR and Project Approval

Once the public review period is closed, Valley Water will prepare a final subsequent EIR (FSEIR) addressing all substantive comments received on the DSEIR. The FSEIR will contain all comments submitted on this DSEIR (including those made at public meetings), responses to those comments, and the text of this DSEIR with revisions made to in response to public comments, as well as staff-initiated revisions. After review of the FSEIR, the Valley Water Board of Directors will then consider certifying the FSEIR as complying with CEQA, adopting CEQA findings of fact and, if necessary, a statement of overriding considerations for significant and unavoidable impacts and approving the Program Renewal.

A Notice of Determination (NOD) would then be filed with the Office of Planning and Research and at the County Clerk's office (14 Cal. Code Regs. Section 15093[c]).

1.5 ORGANIZATION OF THIS SUBSEQUENT DEIR

The content and format of this SEIR are designed to meet the requirements of CEQA. This DSEIR is organized into the following chapters:

- ***Executive Summary***. A summary of the Program Renewal, the issues of concern, project alternatives, environmental impacts, and mitigation measures are provided in this chapter.
- **Chapter 1, *Introduction***. This chapter describes the purpose and organization of the Draft EIR and its preparation, review, and certification process.
- **Chapter 2, *Project Description***. This chapter summarizes the Program Renewal, including: a description of the background and development process; a description of the Program's purpose and objectives; a description of the Program Renewal Area and facilities where the Program Renewal is implemented; the Program approach and proposed activities; Program implementation and oversight; avoidance and minimization measures (BMPs); and required permits and approvals associated with implementing the Program Renewal.
- **Chapter 3, *Environmental Setting and Impact Analysis***. This chapter contains an introduction to the impact analysis conducted in this DSEIR and identifies resource topic areas determined not to be affected by the Program Renewal (Section 3.1). Sections 3.2 through 3.15 describe the existing conditions and background information, the potential environmental impacts associated with the Program Renewal, and mitigation measures for any significant impacts for each resource topic. The purpose of providing the background and a description of the existing conditions is to give the reader an understanding of the resources that could be affected by the Program Renewal. For each resource topic, significance criteria are identified and used to determine the significance levels of the Program Renewal's potential impacts. Mitigation measures are also identified to reduce, where possible, any adverse effects from potentially significant impacts.
- **Chapter 4, *Other Statutory Considerations***. This chapter addresses the Program Renewal's potential to have growth-inducing impacts or contribute to cumulative impacts, defined as the incremental impact of the Program Renewal when added to other related impacts of past, present, and reasonably foreseeable future projects. In

addition, any impacts identified as significant and unavoidable are listed in this chapter.

- **Chapter 5, *Alternatives Analysis***. This chapter describes the process by which alternatives to the Program Renewal were developed and screened. It also evaluates likely environmental impacts of the potential alternatives and identifies the environmentally superior alternative.
- **Chapter 6, *Report Preparation***. This chapter identifies staff from Valley Water, Montrose Environmental, H. T. Harvey, Environmental Science Associates, and Stillwater Sciences who assisted in preparing this Draft EIR.
- **Chapter 7, *References***. This chapter provides a bibliography of printed references, websites, and personal communications used in preparing this Draft EIR.

Appendices

- Appendix A, *Stream Maintenance Program Manual 2027-2036*
- Appendix B, *Notice of Preparation and Comments Received*
- Appendix C, *General Plan Policies and Ordinances*
- Appendix D, *Air Quality and GHG Emissions Calculations*
- Appendix E, *Special-Status Plant Species Considered but Rejected*
- Appendix F*, Mitigation Feasibility Assessment Field Protocol*
- Appendix G, *Pesticide Regulatory Information*
- Appendix H, *Vehicle Miles Traveled (VMT) Calculations*
- Appendix I*, Mitigation Monitoring and Reporting Program*

Chapter 2
Project Description

2.1 INTRODUCTION AND BACKGROUND

The Santa Clara Valley Water District (Valley Water) manages approximately 333 miles of streams and channels throughout Santa Clara County, of which 185 miles are constructed and improved channels. Routine maintenance is necessary to reduce flood risks, ensure structural integrity of Valley Water facilities, enhance ecologic function, and ensure public safety.

Since 2001, Valley Water has administered the Stream Maintenance Program (SMP or Program) to guide, manage, and conduct routine maintenance of streams, improved channels, and related flood protection facilities such that these facilities can continue to provide adequate flow conveyance capacity and function properly. The first program period (2002-2012) is referred to as "SMP-1" and the associated EIR was certified in 2002 (SCVWD 2002).

In 2011, Valley Water updated the program (referred to as "SMP-2") and *Stream Maintenance Program Manual* (referred to as SMP Manual) to guide the program through the 2012-2022 planning period (SCVWD 2014). A subsequent EIR (SEIR) was prepared for the SMP-2 update and was certified in 2012 (SCVWD 2012).

In 2021, Valley Water initiated the third iteration of the SMP (also referred to as "SMP-3" or Program Renewal) to: (1) review SMP activities and revise the SMP Manual, (2) update its environmental compliance documentation, and (3) renew necessary SMP permits to guide the on-going program.

Although the SMP is an ongoing program (with an indefinite time horizon), the previous SMP-2 Manual and Final Environmental Impact Report (FEIR) used a 10-year planning period from 2012-2022 to forecast SMP activities and consider potential environmental impacts. In 2023, Valley Water requested extensions from regulatory agencies for various SMP-2 regulatory agency permits that were set to expire in 2023. Valley Water received permit extensions that are valid through 2026. The proposed Program Renewal (including the updated manual and this document) is intended to cover the 10-year planning period from 2027 to 2036. These updated program documents are intended to fully replace the previous SMP-2 Manual and its supporting documents.

This EIR evaluates the potential environmental effects of Program Renewal to provide the public, relevant public agencies, and stakeholders with information about the Program Renewal and its potential environmental effects. The EIR evaluates the Program Renewal as the proposed project under CEQA.

2.2 PROGRAM RENEWAL UPDATES

Valley Water has made several updates to the SMP Manual to reflect additional maintenance needs and refinements. Primary updates include the following:

- Removal of the "modified with ecological value" channel type designation. As noted in Section 2.5.1, "Channel Types and Ownership," this designation was superfluous and created redundancy issues for Valley Water. For the Program Renewal, Valley Water has reverted the channel classifications to the original two types: modified or unmodified. Channels classified as modified channel with ecological value in the previous SMP-2 Manual are now classified as a modified channel.
- Addition of hazard tree management for public safety purposes.
- Addition of removal of trees greater than 12 inches diameter at breast height (dbh) to the Program Renewal for public safety, fire safety, channel conveyance capacity, maintenance site access, and overall ecological health purposes.
- Removal of invasive plant management as a mitigation option in the Program Renewal. This activity is now included as a vegetation management activity until the countywide Integrated Invasive Plant Management (IIPMP) is implemented.
- Expansion of the minor maintenance work category to include trash boom maintenance, work at maintenance yards, floodwall maintenance, maintenance of the Palo Alto Flood Basin tide gates, and maintenance of fish ladders and passive flood barriers.
- Expansion of the management of animal conflicts category to include bat exclusion activities within the Upper Llagas Creek Flood Protection Project's high-flow bypass tunnel.
- Title change for the "Large Woody Debris" maintenance category to "Downed Tree Management" to more accurately describe the full range of downed tree management activities.
- Updates to Program work limits, which are listed below in Section 2.10.3, "Program Limits and Best Management Practices."
- Refinements to SMP Best Management Practices (BMPs) to reflect updated regulations and improved clarity.
- Updates to the Program's mitigation approach as described in Section 2.10, "Impact Avoidance and Minimization Measures and Compensatory Mitigation."

2.3 ACTIVITIES NOT COVERED

The Program would not include the following activities:

1. Emergency repair work[1];
2. Maintenance work that would increase the flow conveyance or water supply capacity of a facility beyond the designed conveyance channel capacity (as-built design);
3. Maintenance work in stream reaches that are above the 1,000-foot elevation contour;
4. Maintenance work for dams, reservoirs, and other water supply facilities, such as canals, pipelines outside of stream corridors, groundwater percolation ponds, and instream summer dams (maintenance of these facilities will have environmental coverage outside of the Program Renewal);
5. Installation or major modification of fish ladders;
6. Maintenance work conducted on private property by owners or other agencies (with the exception of urgent flood protection work described in Section 1.4.9 of the SMP Manual ((see Appendix A));
7. Maintenance work performed by other agencies;
8. Maintenance associated with capital improvement projects (CIPs) or large construction projects (e.g., projects outside the scope of SMP per-project limits) (see exceptions below).

While CIPs and large construction projects are not included in the Program Renewal, if a CIP is within the scope and size limits of the Program Renewal and a waiver is approved by the permitting agencies, ongoing maintenance for a CIP could be addressed through the SMP. For future CIPs, Valley Water will evaluate the construction and long-term operations and maintenance impacts in the environmental review documents. The CIP environmental review analysis may include a discussion of anticipated operations and maintenance activities that have already been mitigated under the SMP (where permanent mitigation areas [PMAs] have been established). These PMAs are specific to the work location and channel cross section, work activity type, work acreage and scope of work. Permanently mitigated work activities and qualifying areas in future CIPs may be performed under the Program Renewal.

Long-term routine maintenance needs associated with CIPs will be evaluated for their potential coverage by the SMP. Valley Water will identify whether such activities would be covered under existing PMAs or would require additional mitigation. CIPs with maintenance activities not covered by the SMP would need to obtain separate authorizations.

2.4 PROGRAM PURPOSE, GOALS, AND OBJECTIVES

The SMP was developed to provide guiding policies, specific direction on approach, and regulatory authorization for routine stream maintenance. The Valley Water Board of

[1] A situation is considered an "emergency" if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resources Code Section 21060.3).

Directors (Valley Water Board) has adopted a series of Ends Policies to guide Valley Water in achieving its mission. Relevant Ends Policies that guide the SMP are listed below.

2.4.1 RELEVANT ENDS POLICIES

E-3 Natural Flood Protection: Natural flood protection is provided to reduce and improve health and safety for residents, businesses, and visitors now and into the future.

Goal 3.1 Maintain flood protection facilities to design levels of protection.

Objective 3.1.1 Prioritize maintenance of existing facilities over construction of new capital projects.

Objective 3.1.2 Inspect and maintain facilities on a regular basis.

Objective 3.1.3 Perform maintenance using maintenance guidelines updated on a regular basis.

E-4 Water Resources Stewardship: Water resources stewardship protects and enhances ecosystem health.

Goal 4.1 Use a science-based, inclusive approach to protect Santa Clara County's watersheds and aquatic ecosystems for current and future generations.

Objective 4.1.1 Develop and share data to support resilient ecosystems and healthy populations of native species.

Objective 4.1.2 Monitor stream, reservoir, and Bay ecosystem health.

Objective 4.1.3 Use data to prioritize and equitably implement actions to reduce pollution, restore endangered species habitat, and enhance ecosystem function.

Goal 4.2 Sustain ecosystem health while managing local water resources for flood protection and water supply.

Objective 4.2.1 Plan and design projects with multiple benefits, including protecting ecosystem functions, enhancing habitat, and improving connectivity, equitably in all regions of the county.

Objective 4.2.2 Operate Valley Water facilities to balance water supply, flood protection, and ecosystem sustainability.

Goal 4.3 Encourage inclusive, sustainable management of water resources in the Bay-Delta and its watersheds to protect imported water supply.

Objective 4.3.1 Meet future water supply demand through diverse and coordinated water supply planning.

Objective 4.3.2 Promote holistic ecosystem management through science-based decision-making.

Objective 4.3.3 Actively engage in the protection of source water quality through collaboration and funding.

Goal 4.4 Prevent and address pollution of local streams, reservoirs, and the Bay, equitably across all communities. Protect waterbodies from pollution and degradation.

Objective 4.4.1 Encourage stormwater capture, treatment, and reuse.

Objective 4.4.2 Prepare and respond to spills and dumping that threaten local waterways.

Objective 4.4.3 Collaborate with agencies and nonprofits to address homelessness, including supporting the provision of affordable housing by these agencies and nonprofits, and its impacts to Santa Clara County waterways.

2.4.2 PROGRAM GOALS AND OBJECTIVES

The overall goals of the Program Renewal are to:

- Maintain the flow conveyance capacity of Valley Water flood protection facilities to reduce flood risks and ensure public safety, and
- Maintain the structural and functional integrity of Valley Water flood protection facilities and lands.

To meet these goals, Valley Water prioritizes and administers maintenance activities to achieve the following objectives:

- Remove the necessary sediment to provide flow conveyance and safety while maintaining habitat functions in creek systems;
- Manage vegetation to maintain access, flow conveyance, flood protection, and public safety in Valley Water's channels and right-of-way. Vegetation management is also conducted to reduce fire fuel loads and wildfire risk and preserve the structural integrity of flood protection facilities. Vegetation management may also be conducted to promote overall ecological health, improve habitat for sensitive species, maintain restoration sites, and promote stewardship.
- Manage vegetation to allow levee inspections and provide inspection visibility and access to maintenance work sites;
- Stabilize eroding stream and channel beds and banks to protect existing infrastructure, maintain public safety, reduce sediment loading, protect water quality, and protect habitat values; and

- Avoid, minimize, or mitigate impacts on the environment by identifying and prioritizing when maintenance work is necessary and incorporating stream stewardship measures to further reduce potential impacts and enhance ecologic function where possible.

2.5 PROGRAM RENEWAL AREA

The Program Renewal Area is shown in **Figure 2-1** and includes Santa Clara County below the 1,000-foot elevation contour in both the Santa Clara Valley basin and Pajaro River watershed. However, Valley Water does not work in all channels and creeks below the 1,000-foot contour but maintains a much smaller subset of channels and streams. Maintenance activities are generally limited to locations where Valley Water has land rights or has maintenance obligations pursuant to effective licenses and agreements, for approximately 333 miles of creeks and channels. **Figures 2-2 through 2-6** provide additional sub-watershed maps for the Program Renewal Area.

Municipalities within the Program Renewal Area that contain Valley Water owned or maintained channels include the cities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and the towns of Los Altos Hills and Los Gatos.

2.5.1 CHANNEL TYPES AND OWNERSHIP

Streams within the Program Renewal Area are generally classified by two types, as either a modified channel or an unmodified channel. The location of these channel types within each major watershed is shown in Figures 2-2 through 2-6. Photos displaying examples of the channel types are shown in **Figures 2-7 and- 2-8**. **Figure 2-9** illustrates a generalized cross section of a Valley Water channel prior to maintenance and after maintenance has occurred. Note that Figure 2-9 represents the wider and more complex channels in the Program Renewal Area, similar to the photo of Uvas Creek shown in Figures 2-7 and 2-8. Figure 2-9 also illustrates many of the channel features (e.g. top-of-bank, toe-of-slope, etc.) that are referred to throughout this document. **Figure 2-10** shows a cross section of a typical wide channel with a secondary channel, characteristic of larger channels as they flow towards the Bay.

In the previous SMP-2 Manual and based on input received from regulatory agencies, Valley Water included a third channel type referred to as “Modified Channel with Ecological Value”. Upon review, it became clear that additional channel designation created redundancy issues for work notification procedures, potential impact assessments, and other implementation tasks. Therefore, Valley Water has reverted the channel classifications to the original two types: modified or unmodified. Channels classified as modified channel with ecological value in the previous SMP-2 Manual are now classified as a modified channel. (Unknown channel types shown on Figures 2-2 through 2-6 are channels in elevations outside of the Program Renewal Area.) The two channel types are described immediately below.

Modified Channel: In general, the modified channel type includes channels that have been substantially altered from historical conditions. Some modified channels have had capital

improvement projects (CIPs), while others were constructed in conjunction with land development projects or to maximize developable land adjacent to a creek. Most modified channels have established design flow conveyance criteria and will be maintained to those criteria. However, many modified channels were not built according to an engineered design with established design flow conveyance criteria.

Modified channels typically include realigned, straightened, improved, or hardened reaches that have been designed to maximize the efficient flow of water to minimize erosion and flooding. These channels generally are grass--lined or concrete--lined (bed or bank) and may include a low-flow- channel. Some modified channels have the potential for habitat enhancement. Some modified channels already provide ecologic functions and values including features such as closed riparian woodland canopy and/or support habitat for special-status species.

Unmodified Channel: Unmodified channels have not been substantially altered through human intervention (to Valley Water's knowledge) and are generally similar in form and location to the channel under historic conditions. Unmodified channels may have small areas of modification, including bridges, outfalls, culverts, gauges, or other appurtenant structures. Unmodified channels are usually in areas without other types of flood protection measures and generally occur in the foothills or higher elevations of the Program Renewal Area.

Some modified channels and unmodified channels provide inherent ecological values. Mature riparian woodland canopies and older native trees occur along many unmodified channels and some modified channels. Grassy ruderal vegetation, grasslands, and adjacent woodlands provide habitat for nesting birds and other wildlife.

Channel Ownership

Valley Water generally performs routine maintenance work where it owns property in fee title, has an easement, or has maintenance obligations pursuant to effective rights of entry, licenses, and agreements. However, urgent flood protection work may need to be performed on other public or private property where a public purpose is endangered. Occasionally, maintenance activities not subject to SMP mitigation requirements may occur on other public or private property generally for stream stewardship purposes. In cases where maintenance work is anticipated to occur in areas where no fee title or easement property rights exist, Valley Water may acquire new property rights through acquisition of fee title or easements during the course of the Program Renewal and those lands may be managed under the SMP.

Under circumstances where maintenance is anticipated to occur in areas where Valley Water has no fee title or existing easements, and Valley Water does not plan on acquiring new property rights, maintenance work would be coordinated with the adjacent property owner under the appropriate license or agreement.



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MONTROSE ENVIRONMENTAL

Figure 2-1: Program Renewal Area

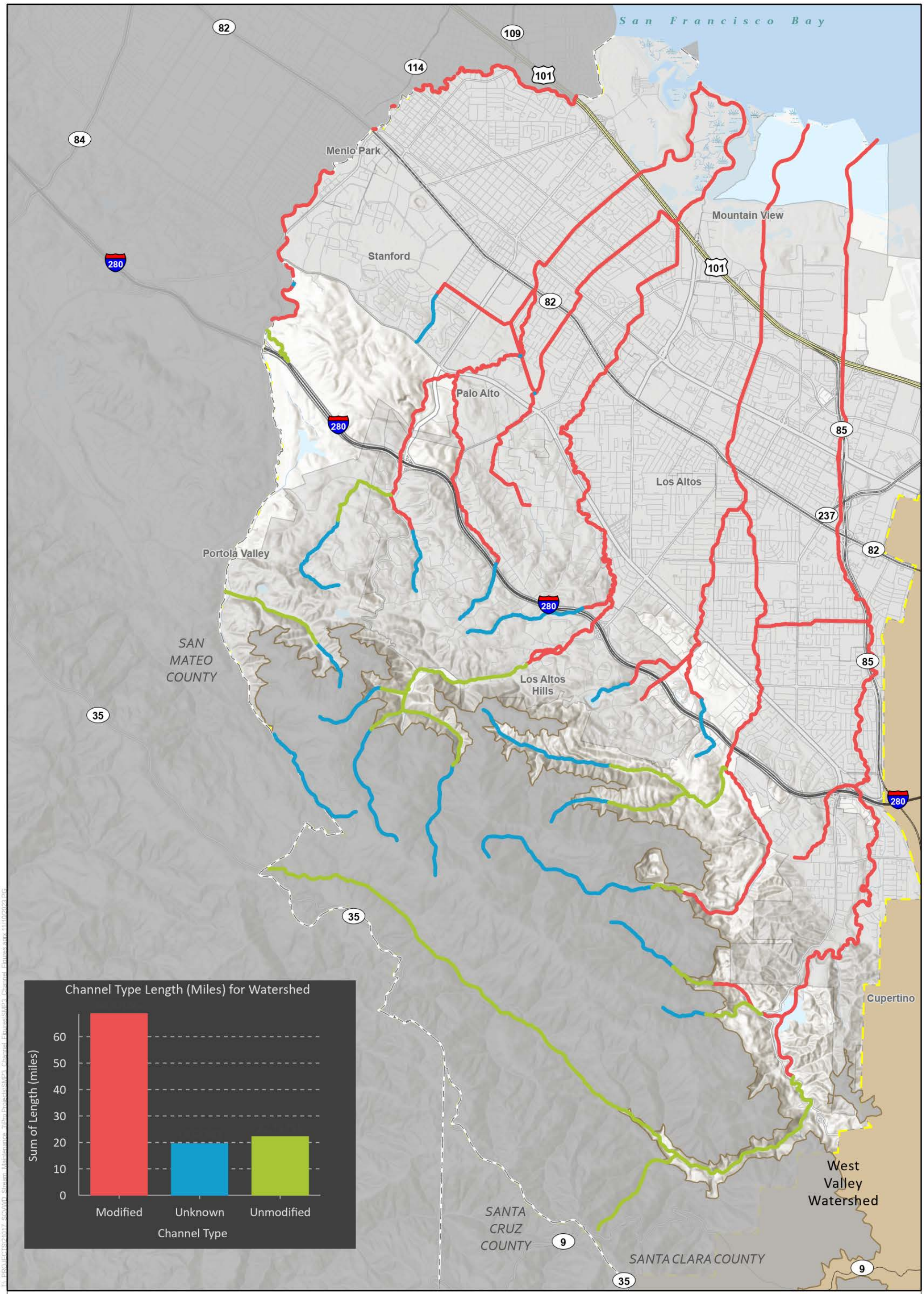


Figure 2-2
Lower Peninsula Watershed
Channel Types

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

MONTROSE ENVIRONMENTAL

Note: "Unknown" channel type are those channels in elevations outside of the program area

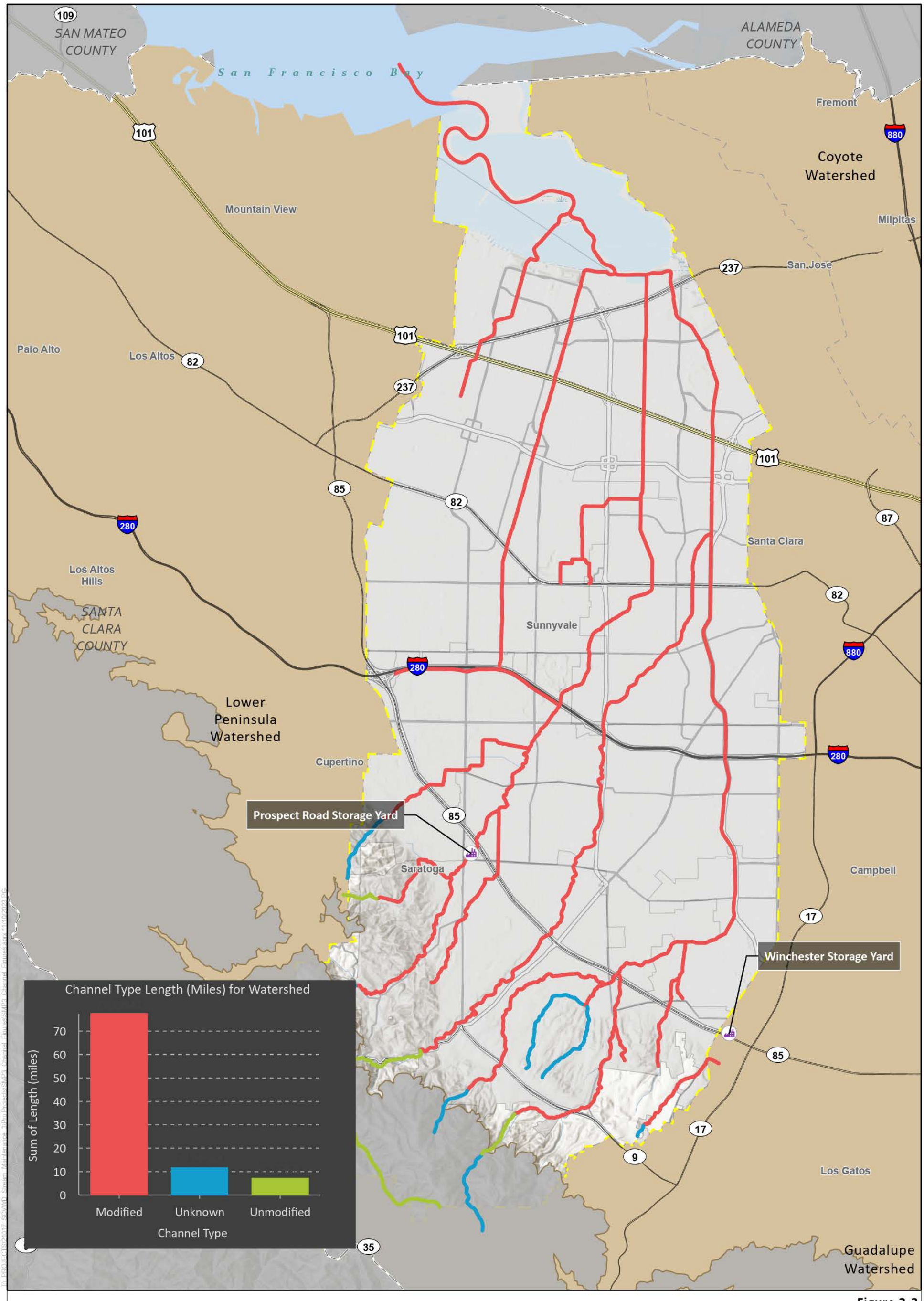


Figure 2-3
West Valley Watershed
Channel Types

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

MONTROSE ENVIRONMENTAL

Note: "Unknown" channel type are those channels in elevations outside of the program area

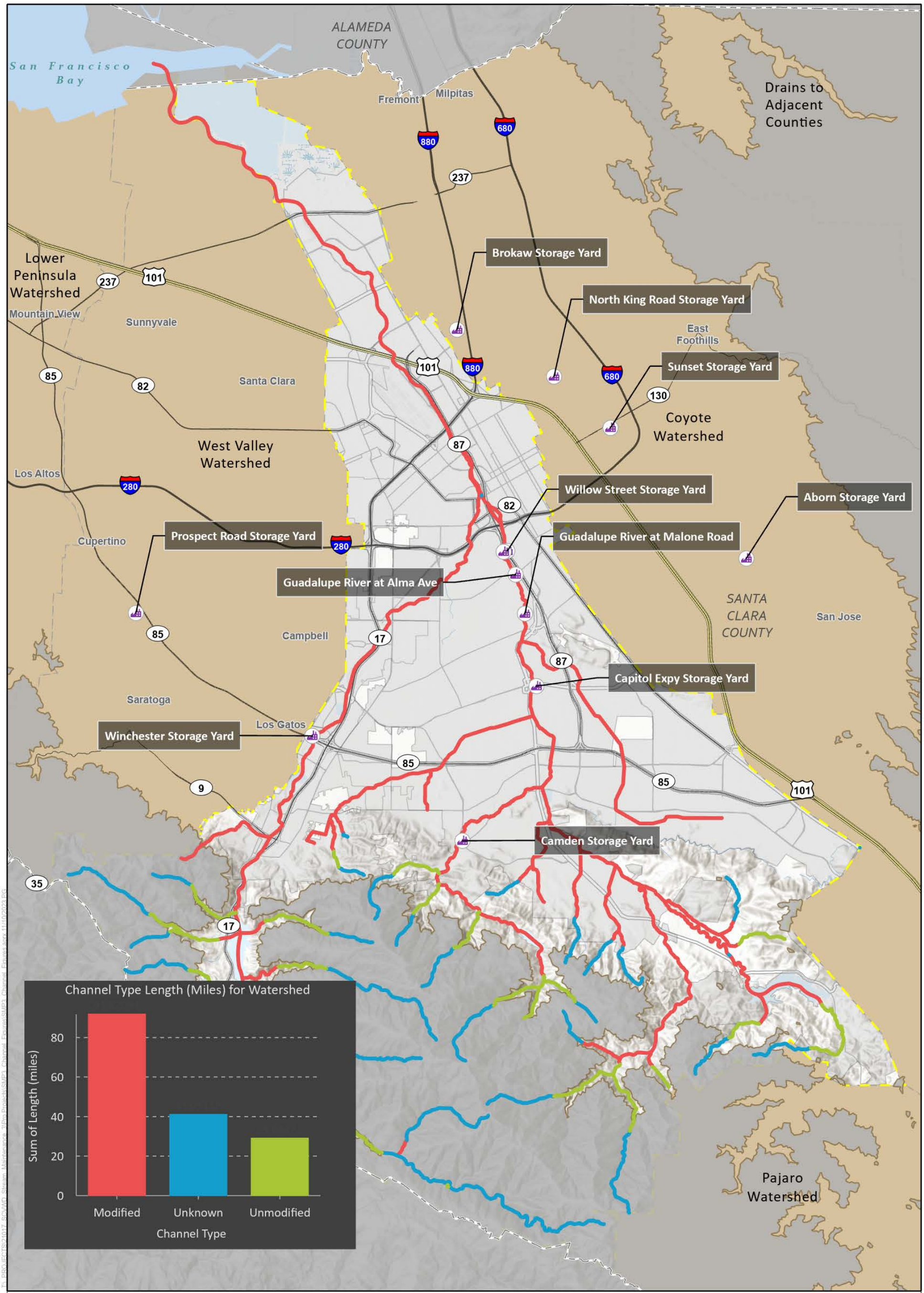


Figure 2-4
Guadalupe Watershed
Channel Types

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

MONTROSE ENVIRONMENTAL

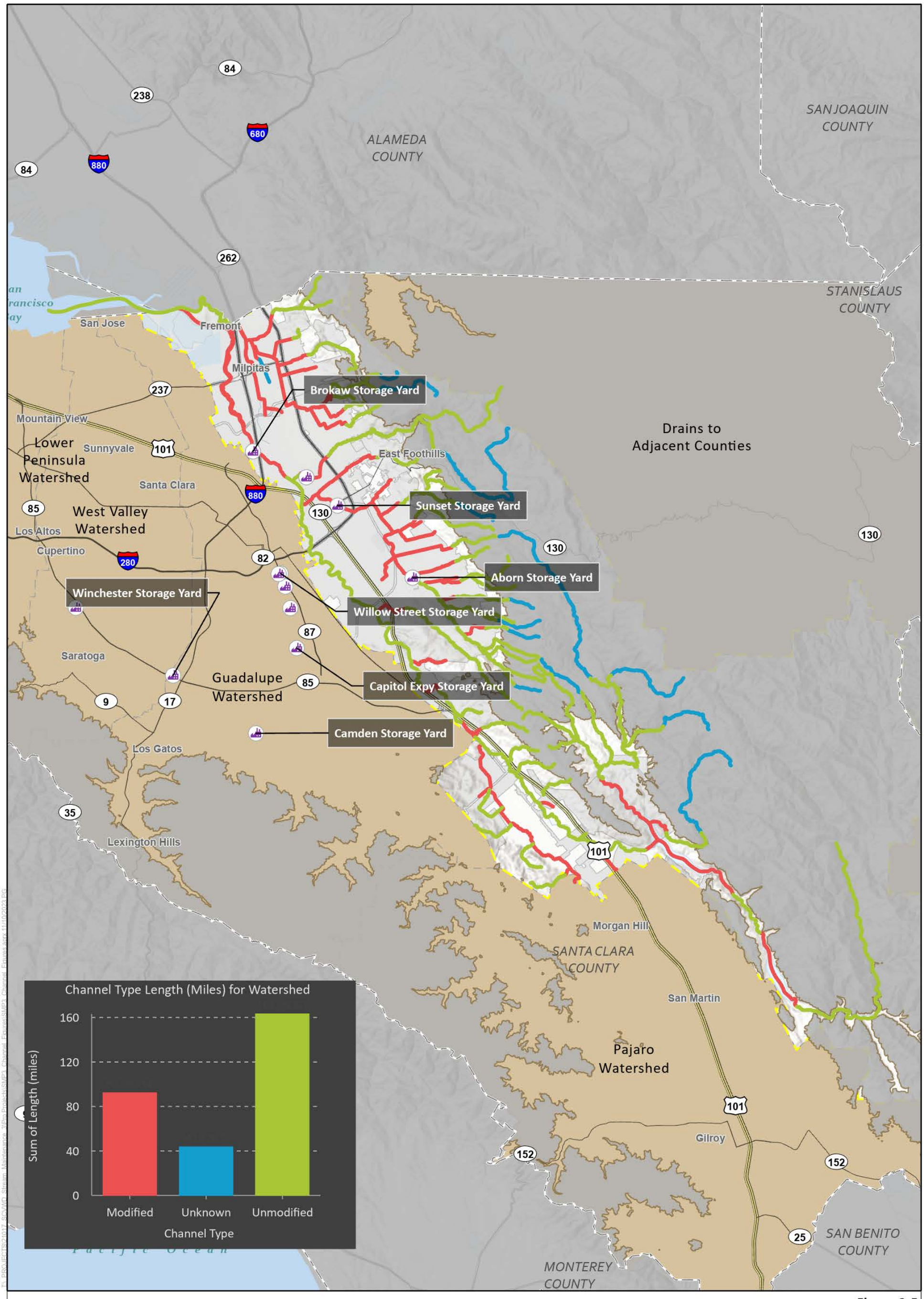


Figure 2-5
Coyote Watershed
Channel Types

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

MONTROSE ENVIRONMENTAL

Note: "Unknown" channel type are those channels in elevations outside of the program area

Aborn Storage Yard

Drains to Adjacent Counties

Guadalupe Watershed

Coyote Watershed

STANISLAUS COUNTY

SANTA CLARA COUNTY

SANTA CRUZ COUNTY

SAN BENITO COUNTY

MONTEREY COUNTY

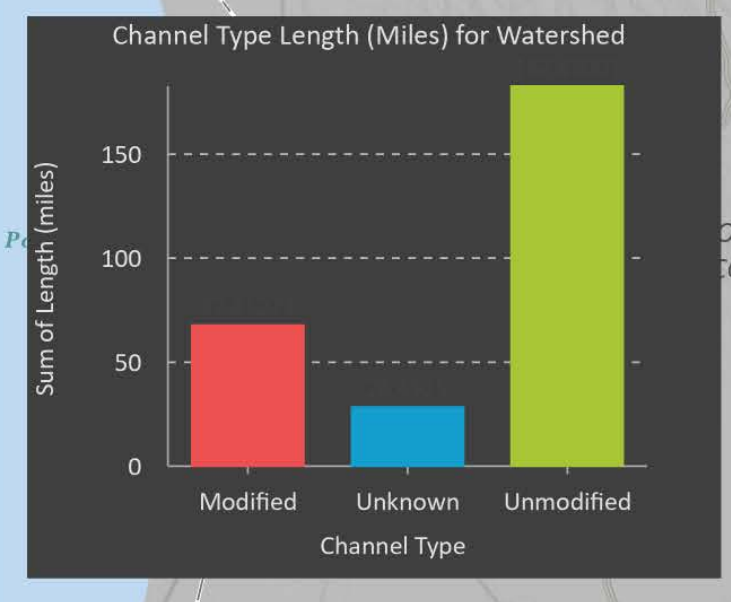
San Jose

Morgan Hill

San Martin

Gilroy

130 680 280 101 82 87 85 1 129 25 152 156



N

0 5 Miles

Channel Type
- Modified
- Unknown
- Unmodified

Watershed
- Pajaro
- Adjacent Watersheds
- Bay Waters
- Upper Elevation Area Outside Program Area
- Maintenance Yards

Major Roads
- Interstate Highway
- State Highway and Route
- US Highway
- County Boundary
- Cities

Figure 2-6
Pajaro Watershed
Channel Types

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

MONTROSE ENVIRONMENTAL

Note: "Unknown" channel type are those channels in elevations outside of the program area



Photo 1. Adobe Creek at Station 219+16.



Photo 2. Lions Creek at Station 10+50.



Photo 3. Matadero Creek at Station 121+08.



Photo 4. Ross Creek at Station 205+46.



Photo 5. San Tomas Aquino Creek at Station 174+17.



Photo 6. Sunnyvale East Channel at Station 156+28.

Project 10.005_July2013

MONTROSE ENVIRONMENTAL

Figure 2-7
(1 of 2)
Representative Modified Channels



Photo 1. Adobe Creek at Station 257+05.



Photo 2. Coyote Creek at Station 1525+50.



Photo 3. Guadalupe River at Station 708+00.



Photo 4. San Francisquito Creek at Station 31+02.



Photo 5. Smith Creek at Station 71+25.



Photo 6. Uvas Creek at Station 461+40.

Project 10.005_July2013

MONTROSE ENVIRONMENTAL

Figure 2-7
(2 of 2)
Representative Modified Channels



Photo 1. San Tomas Aquino Creek at Station 820+00.



Photo 2. San Tomas Aquino Creek at Station 823+00.



Photo 3. Stevens Creek at Station 931+46.



Photo 4. Stevens Creek at Station 943+62.



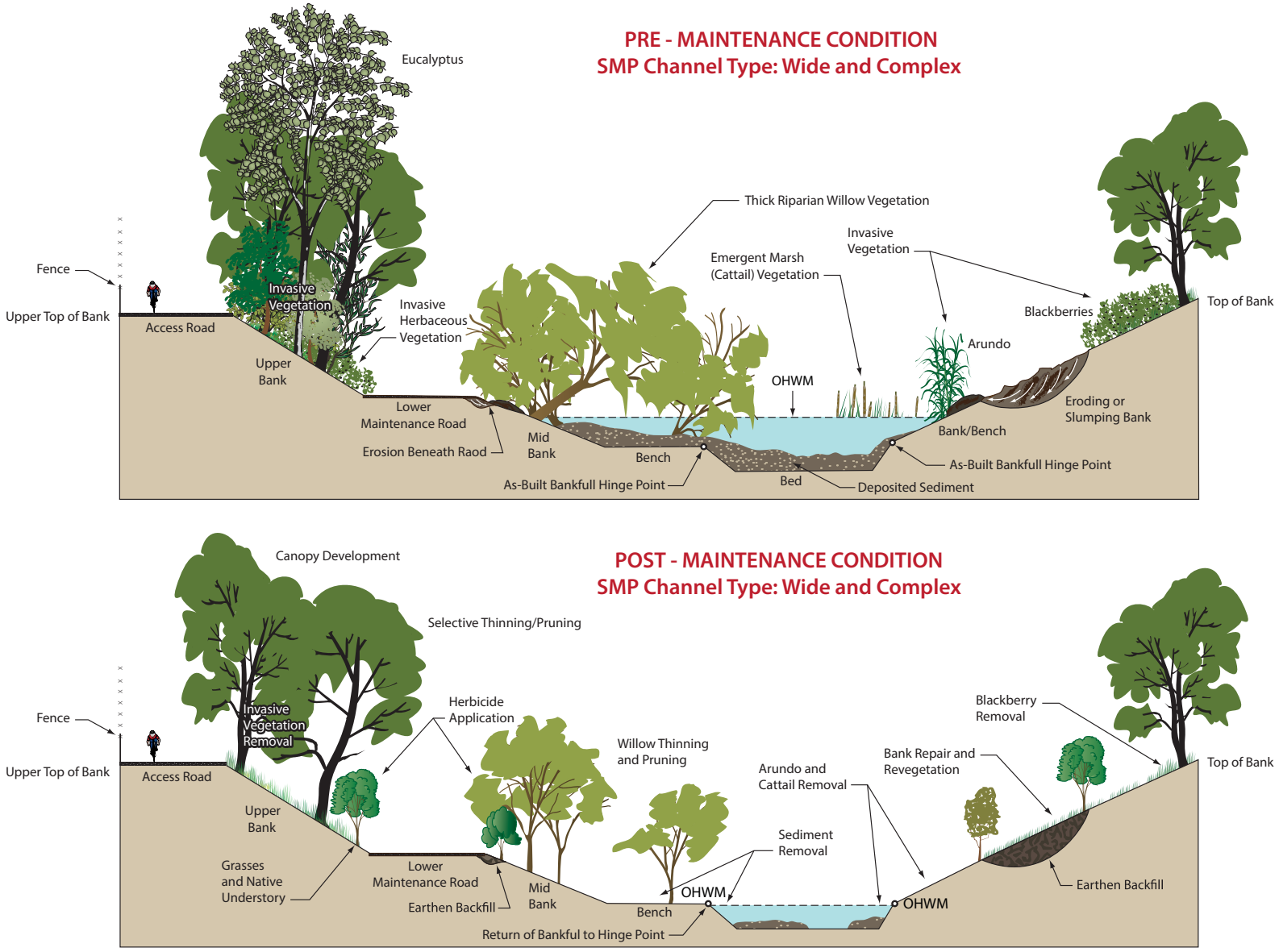
Photo 5. Uvas Creek at Station 327+00.



Photo 6. Llagas Creek at Station 521+75.

MONTROSE ENVIRONMENTAL

Figure 2-8
Representative Unmodified Channels

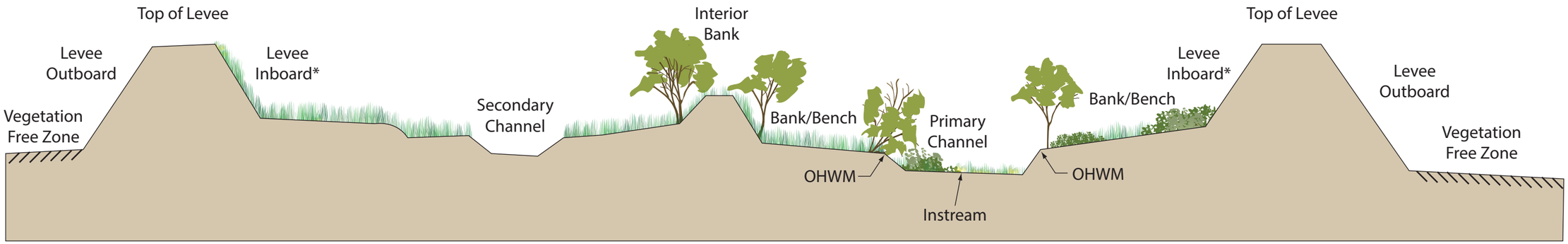


Note 1 - for flood control channels that include engineered levees, the upper bank portion of this typical cross section is analogous to the inboard levee. Many SCVWD levees also have a visible outboard slope that slopes outside and away from the channel to the adjacent land.

Note 2 - the areas in the typical cross-section identified as "bank" or "bench" are typically combined into a single geographic area type "bank/bench" for the purposes of SCVWD maintenance work projections.

MONTROSE ENVIRONMENTAL

Figure 2-9
Example of Valley Water-Maintained Channel



*Although in some instances vegetation exists at levee inboard locations, for federally-constructed flood protection projects for which SCVWD is the local sponsor (and therefore responsible for maintenance), the U.S. Army Corps of Engineers (USACE) has indicated that vegetation-free zones should exist at levee inboard locations to maximize accessibility for inspection and maintenance (unless the local sponsor applies for and receives a vegetation variance from the USACE).

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MONTROSE ENVIRONMENTAL

Figure 2-10
Typical Wide Channel Cross Section with Secondary Channel

2.6 OVERVIEW OF PROGRAM RENEWAL APPROACH

2.6.1 WORK AREA PROJECTIONS AND ANNUAL WORK PLAN

Based on the work performed during the 2012-2022 period, Valley Water has developed projections for work reasonably anticipated to occur over the duration of the Program Renewal (2027-2036). The estimated work projections identify the potential creek and maintenance activities by watershed. Although general maintenance needs have shown a relatively consistent pattern historically, projections of future stream maintenance activities are not intended to represent the exact extent or volume of work that may occur.

Actual stream maintenance activities vary from year-to-year, depending on weather and hydrologic conditions, frequency, and extent of past maintenance activities, and budget/funding availability. Future maintenance needs may occur, consistent with overall Program Renewal projections, but they may vary from the specific locations originally projected. Some maintenance activities, such as bank stabilization, cannot be reasonably projected because they happen in response to hydrologic events and a variety of site-specific factors.

Although the Program Renewal work projections provide an overview of expected maintenance needs over the period 2027–2036 (as described above), maintenance needs in any given year would reflect a variety of factors. Each year, Valley Water develops an annual work plan that identifies the locations, lengths, and areas for the given year's proposed maintenance activities. This information is then provided to the participating regulatory agencies in an annual Notification of Proposed Work (NPW). Additional details about the NPW are provided below in Section 2.9.1, "Annual Work Cycle."

2.6.2 ADAPTABILITY

As a program the SMP was designed and intended to be adaptable, and updated and modified over time as conditions require or improvements are found. One way the current renewal can improve the Program is by achieving the Program's maintenance goals together with identifying opportunities where more natural resources can be left undisturbed or enhanced. As conditions allow and technologies and environmental regulations evolve, keeping the Program adaptable can lead to making changes in work activities to further reduce potential impacts.

In addition, annual post-maintenance meetings, or "lessons learned" meetings, are planned so that Valley Water and resource agencies' staff can evaluate the effectiveness of both the resource protection and the maintenance methods used. These evaluations would be used to update BMPs and SMP processes to create a greater understanding of how to accomplish environmentally sensitive and fiscally-sound maintenance work.

2.6.3 MAINTENANCE GUIDELINES

Valley Water uses maintenance guidelines (MGs) to help assess, identify, and prioritize where stream maintenance actions are needed within and along modified channels. MGs analyze and evaluate channels under a range of sediment deposition and vegetative growth conditions. Using MGs, Valley Water compares existing sediment and vegetation conditions to previous conditions and evaluates how current conditions are reflected in simulated water surface elevations and roughness conditions. In this way, MGs are used to help assess the urgency of maintenance work and identify which creeks should be prioritized.

Note that MGs are not developed for all Valley Water channels; however, Valley Water has developed 40 MGs to date. In general, where Valley Water has defined flood protection Level of Service (LOS) targets based on engineering studies and design, MGs can be more definitive in their use. In cases where MGs do not exist for a modified channel, Valley Water relies on record drawings or channel reach dimensions and conducts hydraulic modeling to assess and prioritize maintenance actions.

Valley Water has not developed MGs for any unmodified channels. Maintenance work conducted in unmodified channels is kept to a minimum and is typically related to providing mandated or improved fire protection, ecological health improvements such as native riparian planting or removing invasive plant species, removing local blockages, or protecting public safety. While maintenance activities conducted on unmodified channels may have a flow conveyance benefit, work is typically not conducted to meet a defined flow conveyance target.

2.7 MAINTENANCE ACTIVITIES

The Program Renewal involves six main categories of work activities, all of which were included in SMP-2:

(1) Vegetation management,

(2) Sediment removal,

(3) Bank stabilization,

(4) Downed tree management (includes large woody debris),

(5) Management of animal conflicts, and

(6) Minor maintenance.

Descriptions of these maintenance activities are provided below, and additional details are provided in the SMP Manual Chapters 4-9 (**Appendix A**.)

2.7.1 VEGETATION MANAGEMENT

Vegetation management is intended to maintain access, flow conveyance, flood protection, and public safety in Valley Water's channels and right-of-way. Vegetation management is also conducted to reduce fire fuel loads and wildfire risk, preserve the structural integrity of flood protection facilities, and provide inspection visibility and access to Valley Water facilities. Vegetation management may also be conducted to promote overall ecological health, improve habitat for sensitive species, maintain restoration sites, and promote stewardship.

Vegetation management activities conducted routinely throughout the Program Renewal Area include pruning, coppicing, vegetation and tree removal, herbicide application, mowing, grazing, mitigation site maintenance, and nonnative invasive plant management. A summary of Valley Water's primary vegetation management activities and where they typically occur is provided below.

Under the Program Renewal, Valley Water may remove invasive plant species described in Chapter 4 of the SMP Manual (Appendix A) through mechanical means, hand removal, and/or herbicide application as described in this section. Throughout implementation of the Program Renewal, Valley Water may add new species to the list of invasive plants targeted for removal. Example types of invasive plants species that would be removed include acacia (*Acacia*), cape weed (*Arctotheca calendula*), broom species (*Ulex europaeus, Spartium junceum,* and *Cystisus scoparius*), cape ivy (*Delairea odorata*), among many others (Table 4-2 in Chapter 4 of the SMP Manual contains a list of all of the invasive species to be removed under the Program Renewal). Invasive plants may be removed anywhere in the Program Renewal Area.

Pruning

Pruning refers to removal of select branches from trees or shrubs to improve tree structure and achieve a defined objective. Pruning may be conducted with mechanized and nonmechanized hand tools. Pruning typically takes place along maintenance roads, fences, access ramps, and levee slopes, public or private roadways, sidewalks, and around traffic or other signage. ~~although it~~ It may also occur in-channel or along terrace areas.

Pruning is typically conducted to ensure access to Valley Water facilities, protect infrastructure, maintain channel conveyance capacity, and for wildfire and public safety. Corrective pruning involves removing specific tree elements to promote long-term tree health or to prevent whole tree failure (e.g., decayed or diseased limb), and is typically prescribed by a certified arborist. Corrective pruning may be conducted anywhere along the stream.

Coppicing

Coppicing is the cutting of a woody plant to ground level. Coppicing may be used to create annual "sucker" growth that may be used as cutting material for direct installation in revegetation projects. The plants that are chosen might typically be targeted for complete removal (e.g., near bridges) but instead are coppiced routinely as a propagule source. Typical

species include willows, mulefat, and poplars. After the tree is cut back to the ground, rather than treating the remaining stump with herbicide, the tree is instead left to re-sprout and provide an ongoing cutting source.

Coppicing may also be used as a technique for fire resilience to reduce the aboveground fuel load. As fire is generally suppressed in the urban areas maintained under the SMP, fuel loads can become unnaturally large, leading to the potential for larger, more destructive fires. When used for fire resilience, typical species for coppicing may also include native shrubs such as coyote brush. Following coppicing for fire resilience, rather than treating the remaining stump with herbicide, the tree or shrub is left to resprout and grow. Coppicing for fire resilience is an alternative to complete removal that promotes a healthy native plant-dominated riparian ecosystem.

Select trees within each major watershed in the Program Renewal Area may be dedicated to this activity. This work activity typically involves use of hand-held and small mechanical tools.

Vegetation Removal

Vegetation removal refers to the removal of woody and herbaceous vegetation less than 6 inches dbh. This work occurs throughout the channel cross-section, including but not limited to instream and immediate overstory areas, stream banks, levees, access roads, pedestrian paths, outboard areas, and at bridges and culverts. This work is typically performed using small hand tools or mechanized tools. Herbicide may also be applied to treated areas to prevent regrowth. Where MGs exist for a channel, the MGs may guide vegetation removal work that is needed on a project-by-project basis.

Over the 10-year Program Renewal period, Valley Water estimates that approximately 140.7 miles of vegetation removal work below top of bank would occur between 2027 and 2036. **Table 2-1** summarizes the total mileage of channel reaches where some amount of vegetation removal work below top of bank would occur by watershed. This table also identifies how much of the work reaches estimated for 2027-2036 would be in channel areas where past vegetation removal work was not previously projected under SMP-1. These "new" channel areas also indicate areas where PMAs have not been established yet. As described under Section 2.10.4, "Compensatory Mitigation" below, Valley Water will seek to establish new PMAs within these vegetation removal reaches as part of the Program Renewal compensatory mitigation package.

Table 2-1. Projected Reach Lengths of Vegetation Removal Below Top of Bank, 2027–2036

Watershed	2027–2036 Reach Lengths of Total Projected In-Channel Vegetation Removal (miles)*	Work Reaches for 2027–2036 Outside of PMAs (miles)**
Santa Clara Basin		
Lower Peninsula	57.3	39.9
West Valley	59.7	34.5

Watershed	2027–2036 Reach Lengths of Total Projected In-Channel Vegetation Removal (miles)*	Work Reaches for 2027–2036 Outside of PMAs (miles)**
Guadalupe	57.8	33.0
Coyote	77.8	60.7
Pajaro Basin		
Pajaro	58.7	27.2
Total	311.3	195.2

* The values shown here include the mileage of channel reaches where some amount of in-channel vegetation removal work is projected to occur between 2027 and 2036. However, the actual work lengths would be much smaller. The overall amount of actual in-channel removal work is anticipated to be 140.7 miles.

** The values shown here include the mileage of channel reaches where some amount of in-channel vegetation removal work is projected to occur outside existing PMAs between 2027 and 2036. The actual length of in-channel vegetation removal work that would occur outside PMAs would be less than the mileage listed in the table.

Tree Removal

Tree removal refers to the removal of any tree greater than 6 inches dbh. Tree removal may be necessary to provide channel conveyance capacity, improve site access, address wildfire safety or public health concerns, and/or improve the ecological health of the stream. Tree removal work involves removing the aboveground portions of a tree using mechanized or nonmechanized hand tools and may be followed by cut-stump treatment using herbicides to prevent regrowth. As part of the Program Renewal, tree removal work has been expanded to include removal of trees greater than 12 inches dbh.

While not previously covered under SMP-2, removal of hazard trees has been incorporated into the Program Renewal. Removal of hazard trees may be needed to ensure public safety along or adjacent to Valley Water channels, access roads, and ramps. Hazard trees may include dead or dying trees, dead parts of live trees, or unstable live trees (due to structural defects or other factors) that are within striking distance of people or property (a target).

Valley Water's preference is to first thin or prune trees before considering tree removal. However, when tree removal is necessary based on a careful evaluation conducted by Valley Water staff, native trees are given a higher level of consideration for preservation than nonnative trees unless a public safety issue is present. Valley Water will compensate for tree removal where required within the riparian habitat (see Section 3.4, "Biological Resources," for a discussion of riparian tree removal). Chapter 4 of the SMP Manual (Appendix A) describes Valley Water's tree removal activities and considerations in detail.

Herbicide Application

Herbicides are used in conjunction with mechanical and hand vegetation suppression methods to ensure channel conveyance capacity, maintain access to Valley Water facilities, ensure public and wildfire safety, maintain revegetation sites, manage invasive plants, and protect infrastructure and ecological health. Herbicides are used only when alternative

methods such as mowing, hand removal or grazing are determined to be ineffective or inefficient to meet the needs of a site.

Herbicide application activities occur in Valley Water channels, access ramps, and on terrace areas, as well as upper and lower maintenance roads, fence lines, and levee slopes. In-channel herbicide application may use a hose and handgun sprayer, backpack unit, or cut-stump application method for smaller and more targeted areas. On access roads, herbicides are applied from a truck-mounted boom, handgun, or backpack (e.g., used around gates and curves) as needed, to control weeds, ensure maintenance access, and provide or maintain firebreaks. The booms have multiple nozzles that are specifically calibrated to provide the dosage and spray pattern appropriate to the application area. To manage invasive plants, herbicide application methods such as basal bark treatment, frill-and-spray, and trunk injection may also be used in addition to the methods listed above.

Valley Water continually works to minimize pesticide use as much as is practical. Valley Water uses Category III and IV herbicides which are the least toxic chemical herbicides designated by the U.S. Environmental Protection Agency (USEPA), with the exception of triclopyr-choline and paraffinic oil, which are Category II. Valley Water pesticide use is consistent with the California Department of Pesticide Regulation (CDPR) and court orders related to protections for threatened and endangered species, including USEPA injunctions[2] (refer to **Figure 2-11** to see Program Renewal Area subject to pesticide injunctions).

Table 2-2 summarizes the projected amounts and types of herbicides that would be used between 2027 and 2036 in comparison to the projected volumes for the SMP-2 planning period and the actual amounts used between 2014 and 2020. Valley Water estimated that some amount of aquatic herbicide application would be needed along 225 miles of channel. Note that Valley Water staff would conduct localized targeted application (i.e., spot spraying) along these routes rather than continuous spraying across 225 miles of channel.

Herbicides are applied by licensed applicators using best methods to minimize overspray, drift, and overall herbicide use. All herbicide applications are made under the direction of a licensed Pest Control Advisor and a written pest control recommendation.

[2] Pesticide use in the Program Renewal Area is subject to two federal court-ordered injunctions: Injunction 1 (Center for Biological Diversity vs. USEPA ((Case No. 02-1580-JSW [JL])), which requires placement of a buffer area around certain habitats of the California red-legged frog (including habitat in the Program Renewal Area) that disallows use of certain pesticides within those habitats and buffer zones (Valley Water will not be using these particular pesticides) and Injunction 2 (Center for Biological Diversity vs. USEPA ((Case No. 07-2794-JCS [N.D. Cal])) which requires preparation of a schedule by which USEPA will review the registrations of pesticides containing any of 75 pesticide active ingredients for their potential effects to one or more of 11 federally listed threatened or endangered species in eight counties around the San Francisco Bay area. The injunction also identifies interim pesticide use limitations intended to reduce exposure to the 11 species during the time USEPA is assessing these pesticides and consulting with the USFWS, as appropriate.

Table 2-2. Summary Comparison of Program Renewal Annual Herbicide Projections and SMP-2 Projections and Actual Amounts Used

Active Ingredient	Usage	SMP-2 Projected Annual Use	SMP-2 Actual Annual Use (2014-2020)	Program Renewal Projected Annual Use
Upland Areas				
Glyphosate	Post-emergent	1,310 gal	536 gal	600 gal
Triclopyr	Post-emergent	6 gal	2 gal	6 gal
Aminopyralid & triclopyr	Post-emergent	N/A	50 gal	300 gal
Clopyralid	Post-emergent	N/A	N/A	4 gal
Ethyl oleate	Non-ionic surfactant	278 gal	N/A	100 gal
Isoxaben	Pre-emergent	1,695 lb	264 lb	500 lb
Dithiopyr	Pre-emergent	N/A	597 lb	600 lb
Aminopyralid	Pre-/post-emergent	N/A	N/A	200 gal
Aminopyralid & florpyrauxifen-benzyl	Post-emergent	N/A	N/A	200 gal
Aquatic				
Glyphosate	Post-emergent	932 gal	387 gal	500 gal
Imazapyr	Post-emergent	N/A	N/A	232 gal
Imazamox	Post-emergent	N/A	N/A	100 gal
Triclopyr-choline	Post-emergent	N/A	N/A	100 gal
Ethyl oleate	Non-ionic surfactant	310 gal	134 gal	210 gal
Paraffinic oil	Non-ionic surfactant	N/A	N/A	100 gal

Notes: gal = gallons, lb = pounds; N/A = not applicable.

Mowing

Valley Water routinely mows ruderal vegetation growing along access roads, terraces, outboard areas, levees, channel slopes, floodplains, and fence lines to provide visual access for facility inspections, allow vehicle equipment/maintenance access, and to maintain flow conveyance or fire safety. Except when performed for flow conveyance, mowing is conducted in accordance with local fire code requirements~~, which require that all weeds and grasses be maintained below 6 inches in height for 10 feet laterally on both sides of access roads.~~ Mowing is also conducted to maintain 30 feet of vegetation clearance around structures where Valley Water has land rights. In some cases, mowing may be required for flow

conveyance, as may be specified in an Operations and Maintenance Manual for a capital flood protection project.

This work is conducted either manually with handheld equipment or through mechanical mowing. Under the Program Renewal, Valley Water anticipates mowing 1,000 acres of land annually between 2027 and 2036.

Grazing

Goat grazing is conducted in limited circumstances to control grasses and herbaceous weeds growth and to reduce fire hazards or to maintain flow conveyance on floodplains where Valley Water has land rights. Before grazing commences, a Valley Water biologist evaluates a targeted area to be grazed to identify sensitive resources including wetlands, special-status plants, wildlife, and other aquatic resources. Sensitive resources and vegetation to be preserved are fenced off as a protective measure. Grazing is excluded from wetted channels, wetlands, and other aquatic resources. Once fencing has been installed, a herd is placed on a parcel.

Invasive Plant Management

Controlling the spread of invasive plant species is critical to improving the ecological health of Valley Water's streams and watersheds. Invasive plants tend to spread aggressively, negatively altering resource allocation regimes, wildlife behavior patterns, soil stability and water quality, resulting in degraded habitat quality and ecological value. In addition, invasive plants can exacerbate flooding and fire danger, undermine structural assets, and obstruct access to roads, levees, and trails.

Valley Water is in the process of developing a countywide Integrated Invasive Plant Management Program (IIPMP). The IIPMP will include a unified strategy for invasive plant control across all Valley Water facilities and programs. It is anticipated that there may be a period of transition between the Program Renewal in 2027 and the completion of the countywide IIPMP plan. During this interim period, Valley Water will continue invasive plant management work under the SMP and respond to newly identified invasive plant populations through the interim guidelines described in Chapter 4 of the SMP Manual (Appendix A). Once the countywide IIPMP plan is completed, some aspects of this plan will be implemented through the Program Renewal. These will include invasive plant management actions in the Program Renewal Area, including actions in or on creeks, riparian areas, access routes, infrastructure, and immediately associated lands.

Previously under SMP-2, Valley Water also used invasive plant management and removal to provide mitigation to program impacts caused by routine maintenance. Based on feedback from participating regulatory agencies, invasive plant management activities that target removal of invasive species are no longer a preferred mitigation approach. However, such activities will continue to occur under the SMP as a stewardship action and as removing invasive species may be required to gain access to Valley Water facilities or reduce overall instream vegetation. Removing invasive plants is now considered a "neutral" activity in that its removal will no longer provide mitigation offsetting credit, but such activities would also

not be considered as negatively impacting the riparian zone ecology or require additional mitigation.

2.7.2 SEDIMENT REMOVAL

Sediment removal involves the mechanical removal of excessive sediment that has deposited within a flood protection channel. Sediment removal is required when accumulated sediment reduces a channel's flow conveyance capacity, prevents facilities or appurtenant structures from functioning as intended, impedes fish passage and access to fish ladders, and/or blocks access to Valley Water facilities. Sediment is removed to restore channel capacity and minimize the flood risk in accordance with the existing channel design (as available). Sediment removal under the Program Renewal does not include increasing a channel's cross-sectional area or capacity beyond the as-built channel design or maintenance baseline.

Sediment to be removed from Valley Water's channels and facilities would be assessed according to the Sediment Characterization Plan established for the SMP. Sediment characterizations would be conducted to determine the physical and chemical properties of the removed sediment using continuous core, discrete sampling, and residual sampling methods.

Collected sediment that meets wetland reuse criteria could be transferred to the South Bay Salt Pond Restoration (particularly Pond A8) to support tidal habitat restoration efforts. Sediment that does not meet these standards but meets standards for landfill disposal would be disposed at a local landfill. Sediment that exceeds hazardous waste criteria would be disposed at an appropriate hazardous waste facility (e.g., Kettleman Hills hazardous waste landfill). Valley Water may also dispose of sediment in upland reuse sites. Sediment from SMP projects that is being reused will meet the sediment standards of the site where it is being reused.

Sediment removal is a projected work activity. However, the estimated projections may not reflect the actual maintenance work conducted. The annual sediment removal need varies yearly according to precipitation, hydrologic, and geomorphic conditions in the Program's channels and watersheds. Over the 10–year Program Renewal period, estimated sediment removal activities include 58 miles of creeks or channels in the Program Renewal Area.

Table 2-3 below identifies the total length of channel reaches where some amount of sediment removal work is anticipated to occur by watershed. Table 2-3 also shows how much of the work reaches estimated for 2027-2036 would be in channel areas where past sediment removal work was not previously projected under SMP-1. These "new" work reaches also indicate areas where PMAs have not been established yet. As described under Section 2.10.4, "Compensatory Mitigation" below, Valley Water will seek to establish new PMAs for these sediment removal areas as part of the Program Renewal compensatory mitigation package.

Table 2-3. Projected Reach Lengths of Sediment Removal Work, 2027–2036

Watershed	Projected Sediment Removal Work Length	Projected Sediment Removal Work Length Outside of PMAs

	2027–2036 (full reaches) (in miles)*	2027-2036 (full reaches) (in miles)**
Santa Clara Basin		
Lower Peninsula	6.8	2.5
West Valley	11.6	5.7
Guadalupe	11.4	1.9
Coyote	20.7	17.8
Pajaro Basin		
Pajaro	26.7	22.5
Total	77.2	50.4

* The values shown here include the total mileage of channel reaches where some amount of sediment removal work is projected to occur between 2027 and 2036. However, the actual work lengths within the reaches would be less as the work will not occur along the entire reach lengths. The total sediment removal length is estimated to be 58 miles, and this is less than the total length of reaches where sediment removal is anticipated to occur. The 58-mile length across the 5 Valley Water watersheds is used as the basis for impact assessment in this EIR.

** The values shown here include the mileage of channel reaches where some amount of sediment removal work is projected to occur outside existing PMAs between 2027 and 2036. The actual length of sediment removal work that would occur outside PMAs would be less than the mileage listed in the table as these values in the table indicate the total reach lengths.

2.7.3 BANK STABILIZATION

Bank stabilization involves the repair and stabilization of eroding channel banks, beds, and levees to re-establish a stable bank, prevent overbank flooding, protect the channel's conveyance capacity, minimize additional sediment input into the channel, and reduce the risk of further erosion. Based on the maintenance work conducted from 2014 to 2020, Valley Water stabilized a total of 1.7 miles of channel banks. This equates to an average of about 0.24 mile of channel bank or levee repair per year.

Although bank stabilization is routine and expected, the specific work locations are not certain until after each winter season. As a result, this type of maintenance (unlike sediment removal and vegetation management) is not a work activity with annual projections. Rather, bank stabilization maintenance needs are assessed annually on an as-needed basis. Mitigation for impacts of bank stabilization projects, if any, is also determined on an annual basis depending on the identified work need and potential resources affected.

The list of suitable SMP bank stabilization treatments has generally not changed since the last program update (SMP-2). These techniques are described in detail in the SMP Manual Attachment D (Appendix A) and summarized in **Table 2-4**, which identifies the SMP's 13 bank stabilization treatments (and variations) and describes whether the technique uses softscape, hardscape, or a combination (hybrid) use of both soft and hard elements. Site specific conditions will determine which method is the most appropriate for the given situation. Valley Water favors the use of soft bank stabilization approaches that use softer bio-technical approaches and first considers these methods for use prior to consideration of more hardened techniques.

Table 2-4. Bank Stabilization Methods

ID No	Method	Bank Stabilization Treatment Technique(s)
1	Earth Repair	Soft
1A	Earth Repair with Buried Rock	Soft
1B1	Earth Repair with Rock Base Vegetated	Hybrid
1B2	Earth Repair with Rock Base Not Vegetated	Hard
2	Live Construction	Soft
2A1	Live Construction with Boulder Base	Hybrid if rock area is vegetated
2A2	Live Construction with Boulder Base	Hard if rock area is not vegetated
2B	Live Construction with Log Base	Soft
3	Contour Wattling	Soft
3A1	Contour Wattling with Boulder Base	Hybrid if rock area is vegetated
3A2	Contour Wattling with Boulder Base	Hard if rock area is not vegetated
3B	Contour Wattling with Log Base	Soft
4	Brush Mattress (Brush Layering)	Soft
4A1	Brush Mattress (Brush Layering) with Boulder Base	Hybrid if rock area is vegetated
4A2	Brush Mattress (Brush Layering) with Boulder Base	Hard if rock area is not vegetated
4B	Brush Mattress (Brush Layering) with Log Base	Soft
5	Surface Matting (Erosion Mats)	Soft
5A	Surface Matting (Erosion Mats) with Boulder Base	Hybrid
5B	Surface Matting (Erosion Mats) with Log Base	Soft
6	Add Rock to Invert	Hard
6A	Rock Cross Vanes	Hard
6B	Root Wads and Boulders	Hybrid
6C	Live Log Crib Walls	Soft
6D	Log Revetment	Hybrid
6E	Bendway Weirs	Hard
7	Cellular Confinement System	Hard
8	Rock Blanket	Hard

ID No	Method	Bank Stabilization Treatment Technique(s)
8A	Boulder Revetment	Hard
8B	Boulder Revetment with Soil and Vegetation	Hybrid
9	Articulated Concrete Blocks	Hard
9A	Articulated Concrete Blocks with Planted Areas	Hybrid
10	Concrete Crib Walls	Hard
11	Sacked Concrete	Hard
12	Gunite Slope Protection	Hard
13	Soldier Piles	Hard

2.7.4 DOWNED TREE MANAGEMENT

Valley Water conducts downed tree management activities as fallen trees, logs, or other debris increases hydraulic roughness either directly or by capturing and trapping additional debris and vegetation. The increase in hydraulic roughness due to downed trees and other debris can result in reduced conveyance capacity. The SMP considers large woody debris (LWD) as downed trees with a diameter of at least 12 inches and a length of at least 6 feet that have fallen below the Ordinary High Water Mark[3] (OHWM) in an anadromous salmonid creek (listed in **Table 2-5** below).

Downed trees that meet the definition of LWD may provide an important ecological role in anadromous salmonid creeks in the Program Renewal Area (e.g., shading, fish refugia). In situations where a downed tree is LWD, Valley Water evaluates the tree for its potential to cause or increase erosion, flooding, reduced channel conveyance capacity, bank failure, or potential to negatively impact a facility (e.g., bridge or culvert). If erosion, flooding risks, and debris capture are unlikely and if the LWD will not damage nearby infrastructure, Valley Water seeks to retain the LWD in anadromous creeks as a habitat feature along the channel. However, if LWD is deemed to pose a potential flood risk or likely to damage infrastructure, Valley Water may reposition, modify, cut, or remove it to maintain channel conveyance capacity or infrastructure integrity.

Table 2-5. Steelhead Distribution in Anadromous Salmonid Creeks Within the Program Renewal Area

Creek / River	Upper Limit of Steelhead Distribution
Central California Coast Steelhead	
Alamitos Creek	Almaden Dam

[3] While OHWM is used by federal resource agencies and bankfull is used by California Department of Fish and Wildlife (CDFW), these metrics generally align when determined based on field indicators. Valley Water staff will make determinations of OHWM/bankfull based on field indicators.

Creek / River	Upper Limit of Steelhead Distribution
Arroyo Aguague*	Falls upstream from confluence with Upper Penitencia Creek
Calero Creek	Calero Dam
Coyote Creek	Leroy Anderson Dam
Guadalupe River/Creek	Guadalupe Dam
Los Gatos Creek	Camden Avenue Drop Structure
Los Trancos Creek*	Approximately 0.4 mile north of headwaters
San Francisquito Creek	Searsville Dam
Stevens Creek	Stevens Creek Dam
Upper Penitencia Creek	Cherry Flat Dam
South-Central California Coast Steelhead	
Bodfish Creek	Bodfish Creek Falls
Cedar Creek*	Approximately 3 miles north of Cedar Creek Boulder Falls #2
Little Arthur Creek*	Approximately 5 miles upstream of the confluence of Uvas Creek
Llagas Creek	Chesbro Dam
Pacheco Creek*	North Fork Dam
Pajaro River	Steelhead occur in all portions of the creek within Santa Clara County
Pescadero Creek*	Headwaters
Tar Creek*	Southern end of Castro Valley approximately 1.8 river miles from headwaters
Uvas/Carnadero Creek	Uvas Dam
South Fork Pacheco Creek*	South Fork Pacheco Creek Boulder Falls

* Although work is not expected on these creeks, they are within the Program area and are therefore included here.

2.7.5 MANAGEMENT OF ANIMAL CONFLICTS

Animals can damage Valley Water facilities by burrowing into levees or channel banks, foraging on revegetated mitigation sites, and/or interfering with Valley Water's work activities. To protect the structural integrity of Valley Water's facilities and to reduce conflicts with species living in sites where work is needed, maintenance work is conducted to repair Valley Water facilities damaged by animals.

Management of animal conflicts refers to the use of avoidance tactics, biological control, physical alterations, habitat modification, live trapping, and fumigation to reduce conflicts between Valley Water facilities and local species. Valley Water uses a range of approaches to

maintain a safe work site environment, including the use of biological controls, levee compaction, filling burrows with soil or slurry, installing physical barriers like chain-link fencing above OHWM, and habitat modification through vegetation management, bird nest deterrence, nonlethal trapping, and fumigation.

As part of the Program Renewal, this category of work has been expanded to include bat exclusion activities within the Upper Llagas Creek Flood Protection Project's high-flow bypass tunnel. Bat exclusion measures may include installing one-way mesh exits that allow bats to leave but not return to the tunnel.

2.7.6 MINOR MAINTENANCE

Minor maintenance includes fence repairs, access road maintenance, trash and debris removal, removal of small downed trees (not in a salmonid creek or less than 12 inches in diameter and less than 6 feet), minor sediment removal (25 cubic yards or less), ongoing maintenance of restoration sites, stream gauge maintenance, minor erosion repairs above OHWM, and other minor maintenance activities needed to maintain Valley Water facilities. This category of work also includes in-kind replacement of structures within the same footprint (i.e., culverts, pipes, creeks-in-pipe, replacement of concrete linings) and in-kind bank repairs if the hardscape and softscape facilities are replaced with similar materials, respectively.

As part of the Program Renewal, the category of minor maintenance has been expanded to include

- Trash boom maintenance. Valley Water manages two trash booms in San Jose (Thompson Creek upstream of Tully Road and Lower Silver Creek downstream of King Road) and installed two trash booms in Palo Alto (Adobe Creek at Highway 101 and Matadero Creek at Highway 101), which are maintained by the City of Palo Alto. Routine trash boom maintenance includes cleaning the facilities two to three times per year by hand or using cranes with a basket attachment or claw.
- Routine work at maintenance yards. Routine work at maintenance yards includes minor grading, maintenance of stormwater pollution prevention measures, stockpiling materials such as boulders, and similar housekeeping activities.
- Floodwall maintenance. Floodwall maintenance may include activities such as graffiti removal, addition of protective coatings, and periodic repairs to prevent erosion.
- Maintenance of the Palo Alto Flood Basin tide gates (located at the confluence of Matadero Creek and Adobe Creek). Maintenance of the Palo Alto Flood Basin tide gates may include removal of accumulated debris and trash; cleaning the gates; in-kind replacement of minor components that have become corroded or worn; and periodic repainting for corrosion protection.
- Maintenance of fish ladders that are not associated with a diversion, and maintenance of passive flood barriers (e.g., along Lower Penitencia Creek). Fish ladder maintenance involves removing accumulated sediment, debris, or algal growth, as well as minor in-kind repairs such as repairing loose, broken, or missing components. Maintenance of

flood protection barriers may include lubrication; changing hydraulic fluids and filters; removing dirt and debris via hand removal, power washer, or vacuum; and in-kind replacement of parts.

For additional details about Valley Water's minor maintenance activities, see Chapter 8 of the SMP Manual (Appendix A).

2.8 SUMMARY OF PROGRAM RENEWAL WORK PROJECTIONS

Table 2-6 below summarizes the Program Renewal work projections for Valley Water's primary maintenance activities and compares those projections to SMP-1 and SMP-2 work projections and to the actual work amounts during portions of the SMP-1 and SMP-2 planning periods. In general, the Program Renewal work projections are similar to or less than past SMP-1 and SMP-2 work projections. Note that the projected aquatic herbicide application amount (227 miles) is substantially lower than what was projected for SMP-2 (846.9 miles). Valley Water has reduced the annual limit for pre-emergent herbicides based on lessons learned from SMP-2 and the need to apply substantially less pre-emergent herbicide than was anticipated in SMP-2.

Table 2-6. Summary of Program Renewal Projected Activities and Actual Work Completed

Primary Maintenance Activities	Extent of Activities (Miles)				
	SMP-1 Projected Activities (2002-2012)	SMP-1 Actual Work Completed (2002-2009)	SMP-2 Projected Activities (2012-2022)	SMP-2 Actual Work Completed (2014-2020)	Program Renewal Projected Activities (2027-2036)
Vegetation Management – In-Channel Removal	60	46.7	150.9	76.4	140.7
Vegetation Management – Aquatic Herbicide Application	183	172.9	846.9	147.6	227
Sediment Removal	58	32.3	42.8	33.4	58
Bank Stabilization	N/A	7.5	N/A	1.7	N/A

Source: Valley Water 2012; data compiled by Montrose Environmental in 2022

2.9 IMPLEMENTATION AND OVERSIGHT

2.9.1 ANNUAL WORK CYCLE

SMP maintenance activities occur on an annual cycle and generally occur in three phases.

- Phase 1. In the winter and early spring, maintenance needs are assessed and prioritized, the annual maintenance work plan is developed, and regulatory agencies are notified through an NPW document submitted by Valley Water.
- Phase 2. During the summer and early fall, maintenance projects are implemented.
- Phase 3. Toward the end of the year and into the following winter, the annual summary report (ASR) is developed, distributed to regulatory agencies, and Valley Water staff and managers typically meet with regulatory agencies to review the past year's work.

These work phases are described in more detail below.

Phase 1: Annual Maintenance Activity Identification and Development of NPW

During the winter and early spring, Valley Water staff would finalize its review of flood protection facilities and channels inspected to identify and prioritize maintenance needs. Maintenance work may be proposed either as part of the annual NPW or as identified throughout the year by individual Valley Water staff work orders.

By April 15 of each year, Valley Water would notify the relevant regulatory agencies (i.e., those agencies with jurisdictional authority or oversight) of the year's planned maintenance projects. The relevant regulatory agencies would be provided with information describing proposed maintenance activities, locations, natural resource conditions, and any other key resource issues in the NPW. The NPW would describe which ground-disturbing maintenance activities would result in impacts on wetlands or waters of the U.S. and state as well as riparian habitat. The NPW also describes in detail Valley Water's proposal for providing compensatory mitigation for those impacts and may include one or more options described in Section 2.10.4, "Compensatory Mitigation," below.

Some activities, such as most minor maintenance projects or opportunistic invasive plant removal projects, do not require advance notification through the NPW process. In these cases, appropriate resource protection measures and BMPs would be identified, and work would be allowed to proceed.

In contrast, for other maintenance activities, a more detailed review process would occur and may include a site assessment and/or engineering evaluations. These activities would be reviewed to verify they were covered under the long-term regulatory clearances provided in conjunction with the Program Renewal. If the work was not covered by the Program Renewal, the appropriate Valley Water project development process would be followed and may include individual CEQA review and project-specific regulatory permits or clearances. For covered activities, appropriate resource protection measures and BMPs would be identified and added to the work order. For maintenance activities requiring compensatory mitigation, mitigation needs would be planned and described in the NPW. Pre-maintenance meetings would be held with appropriate Valley Water staff to discuss site-specific requirements, environmental constraints, and applicable BMPs. It may be necessary for Valley Water to submit a subsequent NPW in a given year, if late-season rains occur or other factors arise out of Valley Water's control.

Phase 2: Implementation of Annual Program Renewal Activities

Aside from minor maintenance activities (which can be conducted year-round), other Program Renewal maintenance activities would be implemented during the summer and fall season (as described below) or as described in the work order. Specific maintenance steps and methods are described in more detail below. In addition, field monitoring of maintenance work (e.g., inspections of BMPs) would occur for both sediment removal and bank repair activities. Field monitoring would include inspections of BMPs so that they would be effective in preventing adverse impacts to water quality and stream habitats.

In general, sediment removal, instream vegetation removal involving ground disturbance, management of animal conflicts involving ground disturbance, aquatic herbicide application, and bank stabilization work would be conducted between June 15 and October 15. If the fall season remains dry, work could continue until the first significant rainfall event and in accordance with the work windows outlined in Chapter 3 of the SMP Manual (Appendix A). A significant rainfall event is defined as local rainfall of 0.5 inch or greater within the watershed over a 24-hour period. Valley Water relies on weather forecasts to prepare for situations when significant rains are anticipated. In general, permits issued by regulatory agencies for the Program Renewal and/or mitigation requirements stemming from the CEQA analysis may also place additional limitations on work types and windows.

Phase 3: Annual Reporting and Review with Regulatory Agencies

At the end of each year's maintenance season, an ASR would be developed and submitted to the appropriate regulatory agencies. This report would include a summary of the year's maintenance projects, describing what activities occurred and where, a description and confirmation of the restoration and mitigation activities implemented, and other SMP updates as necessary.

Following submittal of the ASR, regulatory agency staff would be invited to meet with Valley Water staff for an annual "lessons learned meeting" to be held in February or March of each year to evaluate the effectiveness of both resource protection and maintenance methods used in the preceding construction season. The information discussed at these annual lessons learned meetings would be used to adaptively manage the BMPs and SMP processes to improve SMP effectiveness.

2.9.2 Maintenance Crew, Work Durations, Equipment, and Maintenance Methods

A vegetation management crew typically includes three to four Valley Water staff and is often supplemented by external skilled laborers, bringing the overall crew size to eight to 10 personnel. On rare occasions, two vegetation management crews work together on a site; in such cases, the maximum number of workers onsite is 16-20 workers. For larger maintenance projects (e.g., bank repairs), field operations construction crews typically include four Valley Water staff, but on occasion may include up to eight staff. Field operations crews may also, in some cases, be supplemented by up to 10 outside skilled laborers for activities such as encampment cleanup.

While some maintenance activities can be completed in a single day, more complex projects (e.g., large bank repair, vegetation management, or sediment removal projects) may require more than 30 days to complete. Vegetation management activities would require relatively short work times at any given location as maintenance crews typically cover a large area in a workday.

Maintenance activities would generally be conducted during daytime hours (between 6:30 a.m. and 4:00 p.m.) on weekdays. If maintenance activities do not involve the use of heavy equipment, they may begin as early as 6:00 a.m. Regardless, Valley Water would adjust work hours to ensure consistency with local noise ordinances.

The specific pieces of equipment used for the maintenance activities would vary depending on the facility and type of maintenance activity required. Below is a description of the typical types of equipment and work activities that would occur for each work category.

Vegetation Management

Vegetation management techniques would include pruning and hand removal, using small tools and hand-held equipment (chainsaws, weed-eaters), mechanical removal using light or heavy equipment, herbicide application, and grazing. Light equipment used for vegetation removal may include a disc attachment on a tiller to clear aboveground herbaceous plants on the upland parcels outside of stream banks, and flail mowers to cut weeds and other vegetation on the inside slope of some levees or stream banks. Heavy equipment that may be used for vegetation management could include a specialized amphibious tracked vehicle (e.g., Marsh Master®) with cutting attachments or a skidsteer, backhoe, or rubber-tracked excavator for removing material from the channel.

Where tree removal is necessary for equipment access, Valley Water staff would target nonnative trees for removal first. Removal of large branches from mature trees for equipment access would be evaluated carefully and avoided whenever possible. For tree removal work, the above-ground portions of a tree are typically removed using mechanized equipment or nonmechanized hand tools. Removed trees may then be cut stump-treated with herbicide to prevent regrowth.

For grazing activities, goats are typically used for nontargeted weed control. Before grazing work commences, a Valley Water biologist evaluates a targeted area to be grazed to identify sensitive resources. As a protective measure, fencing is installed around sensitive resources and vegetation to be preserved.

Sediment Removal

Sediment removal activities may require use of the following: excavators, long-reach excavators, bulldozers, scrapers, and front-end loaders. Water trucks may be used for dust control. Vacuum trucks may be used for removing sediment from pipes and culverts.

Compact loaders may also be used to remove sediment from within the channel where larger equipment will not fit on the access road. Compact loaders may push the excavated sediment up existing access ramps, where available. Where there is not existing access into the channel,

construction of a temporary access ramp may be required (described in BMP GEN-28, in **Table 2-10**). The sediment is then either placed directly into dump trucks parked on the access road or stockpiled at central locations along the channel for subsequent removal. Stockpiling of materials would occur as described in BMP GEN-26.

Where possible, equipment is operated from the top-of-bank above and outside of the channel from maintenance access roads. If water is present in the channel, a temporary dewatering or bypass system would be installed. Once the work area is dry or isolated from water flow, sediment may be removed from channels, debris or detention basins, culverts, or pipelines.

Bank Stabilization

For bank stabilization projects, equipment typically used include excavators, bulldozers, front-end loaders, compact track loaders, and soil compactors for bank grading and earth-moving activities, and water trucks for dust control. The staging of equipment would generally occur on adjacent access roads; soil and other bank repair materials are typically placed in previously disturbed areas (i.e., service roads, turn-outs). In some cases, bank stabilization projects may require the installation of temporary roads and ramps to access the work site. To the extent feasible, access roads and other previously disturbed areas are used for the staging of soil and bank stabilization materials.

Management of Animal Conflicts

Management of animal conflicts generally would be conducted using small tools and hand-held equipment. This would include establishing buffers and biological repellants, trapping, and fumigant applications (see Appendix A, Chapter 7for more details on methods).

Heavy equipment (e.g., excavators, compact track loaders, and soil compactors) may be used to modify habitat conditions and reduce or eliminate burrowing animals through surface compaction, filling of burrows with slurry~~, and tilling areas to destroy food sources~~.

All lethal control methods would be designed to comply with the County Agriculture Commission requirements and would be implemented using BMPs that would be designed to avoid or minimize effects on special-status species.

Minor Maintenance Activities

In general, minor maintenance activities would involve equipment described above for the work categories. Maintenance of passive flood barriers may require use of built-in hydraulic systems or mechanical equipment such as a crane or forklift. Additional information about specific implementation methods can be found in Appendix A, Chapter 8.

2.10 IMPACT AVOIDANCE AND MINIMIZATION MEASURES AND COMPENSATORY MITIGATION

2.10.1 PROGRAMMATIC IMPACT AVOIDANCE AND MINIMIZATION

The Program Renewal would incorporate the following overarching principles to protect natural resources and guide decision-making for stream maintenance activities and projects. Proposed program limits and BMPs (discussed in Section 2.10.3, "Program Limits and Best Management Practices" were developed to be consistent with these principles.

1. Avoid unnecessary intervention. Maintenance should only be done when it is determined to be necessary and appropriate to maintain conveyance, maintain the structural integrity of stream banks and beds, maintain access, protect public safety, or ecologically improve watershed ecosystems, streams, and/or other natural resources.

2. Consider the ecological system and its processes, including adjacent land uses, when determining maintenance necessity. If maintenance is necessary, then, before selecting sediment, vegetation or bank stabilization treatments, work to understand the channel system and its formative processes to know why the reach is functioning as it is. Established MGs are a method to document and centralize applicable information to be used to guide appropriate maintenance activities. Where channels are bordered by developed land uses, flood protection requirements may limit stream maintenance options. Maintenance activities will not increase the level of flood protection provided to surrounding lands as defined by as-built information for the reach or increase the dimensions of an unmodified channel.

3. Seek maintenance solutions that minimize impacts on the environment. Implementing BMPs, work windows, work activity program requirements, Program Renewal limits, and incorporating geomorphic approaches, when possible, can assist in minimizing impacts.

4. Integrate maintenance activities towards sustainability to reduce frequency of maintenance. The approach for channel maintenance should integrate effective activities that, in time, will reduce the overall need for continued maintenance support.

2.10.2 AVOIDANCE OF SERPENTINE HABITATS AND PAYMENT OF NITROGEN DEPOSITION FEES

Sensitive serpentine-associated plants and animal communities occur in the Program Renewal Area along the edges of the Santa Clara Valley floor and foothills. Serpentine plant communities in the Program Renewal Area support a unique assemblage of plant species, including serpentine-associated special-status species that are known to be present or could occur in the Program Renewal Area (see Section 3.4, "Biological Resources," for a list of plant species). Program Renewal activities will avoid maintenance activities in serpentine habitat areas.

Compliance with serpentine-related Valley Habitat Plan (VHP) conditions and payment of VHP impact fees for serpentine land cover types are not anticipated to be needed, as no direct impacts within serpentine habitats would occur. However, due to the sensitivity of serpentine habitats and the rarity of serpentine-associated special-status plants in the region, to ensure that any indirect impacts of Program Renewal activities on these species are reduced to less-than-significant levels, as an EIR mitigation measure (Mitigation Measure BIO-1) Valley Water will pay VHP nitrogen deposition fees through the Santa Clara Valley Habitat Agency's Voluntary Fee Payments Policy for VHP-covered (and non-VHP-covered) activities to reduce effects of nitrogen deposition from nitrogen emitted by maintenance vehicles and equipment. Section 3.4, "Biological Resources," further discusses the VHP nitrogen deposition fee payment pursuant to Mitigation Measure BIO-1.

2.10.3 PROGRAM LIMITS AND BEST MANAGEMENT PRACTICES

In an effort to minimize impacts resulting from maintenance activities, the Program Renewal includes the following limits:

- Coppicing would be limited such that no more than 20 percent overstory canopy removal is allowed in any stream reach, and at least 50 percent of the understory canopy of native vegetation would be retained.
- Removal of nonhazard trees 6-12 inches dbh would be limited to 2,000 live trees between 2027 and 2036. On an annual basis, this work would be limited to 400 live tree removals per year. For each project, the Program Renewal would allow no more than 20 percent overstory canopy removal in any reach, and at least 50 percent of the understory canopy of native vegetation would be retained.
- Removal of nonhazard trees greater than 12 inches dbh would be limited to 150 live trees between 2027-2036. On an annual basis, this work would be limited to 20 live tree removals per year. For each project, no more than 20 percent overstory canopy removal would be allowed in any reach, and at least 50 percent of the understory canopy of native vegetation would be retained. Removal of trees greater than 12 inches dbh is a new activity under the Program Renewal that was not included in SMP-2.
- The Program Renewal's in-channel and non-in-channel herbicide application limits are based on gallons/pounds of product and are summarized in **Tables 2-7** and **2-8** below. The per project limits would correspond to the product label restrictions per application.

Table 2-7. In-Channel Herbicide Use Limits, 2027–2036

Product	Average Annual Limits * (gallons)	10-Year Program Limits (gallons)
Aquatic Herbicide	932	9,320
Surfactant	310	3,100

Table 2-8. Non-In-Channel Herbicide Use Limits, 2027–2036

Type of Chemical	Average Annual Limits	10-Year Program Limits
Post-emergent Herbicide	1,310 gallons	13,100 gallons
Pre-emergent Herbicide	2,700 pounds	27,000 pounds
Surfactant	100 gallons	1,000 gallons

Note: The limits for pre-emergent herbicides represent an approximately 79 percent reduction in pre-emergent herbicide use from SMP-2 projections. Valley Water has reduced the annual limit for pre-emergent herbicides from 13,128 pounds per year to 2,700 pounds per year based on lessons learned from SMP-2 and the need to apply substantially less pre-emergent herbicide than anticipated under SMP-2.

- There is no limit to the number of sediment removal projects that may occur each year; however, a separation of 500 feet between sediment removal work sites is required and each project must comply with the quantitative objectives established by the MGs (where developed). Sediment removal in modified channels would not exceed 5,000 linear feet for individual projects. Sediment removal in unmodified channels must be associated with a facility or human-made structure (i.e., bridge, outfall, gauge, or grade control) and would not exceed 300 linear feet for individual projects. Valley Water may submit waiver requests for sediment removal projects that exceed the per-project limits; such requests must be reviewed and approved by appropriate regulatory agencies before commencing work.
- There is no limit to the total number of bank stabilization projects that may occur each year. The annual limit is one linear mile of channel; however, hardscape areas that are replaced with softscape or hybrid methods may exceed the per-project limits and will not be counted toward the annual maximum one-mile limit. In-kind bank stabilization projects will not be counted toward the annual maximum one-mile limit. For individual bank stabilization projects, limits by repair type include 500 linear feet for soft methods and 300 linear feet for hard and hybrid methods. No repair method would exceed 0.5 acre below OHWM for individual projects. A separation of 250 feet between bank stabilization repair sites is also required to ensure that each repair has independent utility. Valley Water may submit waiver requests for bank stabilization projects that exceed the per-project limits; such requests must be reviewed and approved by appropriate regulatory agencies before commencing work.
- For downed tree management activities in channels supporting anadromous salmonids, up to 200 cubic yards of LWD cutting and removal work would be allowed during the 2027-2036 period. This 10-year limit does not apply to downed tree removal activities required for fish passage or those associated with removal of debris jams/trash rafts as these efforts would result in a water quality benefit.
- Animal conflict management activities involving surface compaction and filling of burrows above OHWM would not exceed 42 miles during the 2027-2036 period.

- For minor maintenance activities, individual projects would not exceed 0.08 acre of wetland/riparian vegetation impacts. Project reporting is required for minor maintenance projects that result in 0.01 acre or more of wetland/riparian vegetation impacts or any activity where dewatering is performed. The annual limit for minor maintenance projects is 0.5 acre of wetland/riparian vegetation impacts. The 5-year program limit is 2 acres of wetland/riparian vegetation impacts and the 10-year program limit is 4 acres of wetland/riparian vegetation impacts.

In addition to the above-described program limits, Valley Water implements SMP BMPs, which include standard practices and impact avoidance measures that would minimize potential environmental impacts. BMPs presented at the end of this chapter in **Table 2-10** are also included in the SMP Manual (Appendix A). These measures are implemented prior to, during, and post maintenance operations.

BMPs are implemented to avoid or minimize impacts to water quality and other environmental resources and include measures and procedures to identify site or maintenance constraints, such as biological or cultural resource surveys. They protect and enhance existing habitat, protect maintenance workers and the public from equipment hazards, and provide specific and detailed guidance on vegetation management procedures, sediment removal activities, and bank stabilization techniques implemented by Valley Water. BMPs also include procedures for animal management activities and application of pesticides.

2.10.4 COMPENSATORY MITIGATION

The Program Renewal includes many impact avoidance and minimization approaches and measures that have been developed, implemented, and revised since the SMP was initiated in 2001. Additionally, the SMP includes several BMPs, specifically targeted to the Program's maintenance work activities to further avoid or minimize potential impacts. However, in instances where impact avoidance and minimization measures on their own are not adequate to offset potential Program impacts, the SMP includes a compensatory mitigation approach which builds on the 25-year history of providing compensatory mitigation as part of Valley Water's SMP. Valley Water provides on-going compensatory mitigation activities as part of the routine operation and implementation of the SMP. The compensatory mitigation approach is summarized in this section to provide a general understanding and context on how Valley Water's on-going mitigation activities were considered during the evaluation of potential Program impacts and the development of CEQA mitigation measures within this DEIR. The following paragraphs briefly describe the compensatory mitigation approaches used during SMP-1 and SMP-2, and the updated approach for the Program Renewal planning period.

Background on SMP-1 and SMP-2 Mitigation Approaches

Under SMP-1, Valley Water established PMAs for certain in-channel maintenance activities to offset impacts to wetlands and waters of the U.S./state. Specifically, PMAs were established for sediment removal, removal of vegetation less than 6 inches dbh, and in-channel herbicide application activities conducted during SMP-1. Where PMAs were established, those specific activities were mitigated for in perpetuity. In addition, where sediment removal PMAs were

established during the SMP-1 period, future impacts to vegetation less than 6 inches dbh and wetlands on the sediment within the same sediment removal footprints were also permanently mitigated for. During the SMP-1 planning period (2002-2012), Valley Water mitigated work activities in perpetuity through a combination of land acquisition, habitat protection, and wetland restoration/creation activities. SMP-1 mitigation projects are summarized in the SMP Manual (Appendix A).

Under SMP-2 (20134-2023), Valley Water adjusted its approach to include more on-site and off-site mitigation activities based on annual work needs in addition to seeking additional PMAs. Under the SMP-2 approach, Valley Water provided and continues to provide compensatory mitigation for impacts to wetlands/other waters on an annual basis using the following three approaches:

1. **On-site and Off-site Ecologic Services-based Mitigation**: This included invasive plant management, native plant revegetation, removal of trash and pollutants from encampment activities, concrete removal, and rehabilitation of encampment-related excavated banks.

2. **Land-acquisition-Based Mitigation**: This included using remaining credit from completed SMP-1 mitigation projects and creation of new land acquisition-based projects.

3. **Species-specific Mitigation**: This approach included gravel augmentation and building instream complexity features.

Toward the latter half of the SMP-2 period (2019-2023), Valley Water moved toward a strategy of prioritizing multi-benefit mitigation sites. For example, along Calera Creek, Valley Water conducted sediment removal over a large area to make sure there was capacity in the reach to allow long term vegetation establishment, removed some existing large invasive trees, and installed a large revegetation site. Valley Water also implemented a mitigation project on Saratoga Creek which included a combination of rehabilitating a bank that had been altered by others through compaction and construction of dirt bike ramps, trash removal, and removal of concrete fragments in the channel.

During SMP-2, Valley Water primarily mitigated for impacts to salmonid habitat features through the construction of projects that installed LWD, gravel, and/or instream complexity features in the same watershed. Valley Water also constructed one fish passage improvement project on Stevens Creek at Evelyn Avenue. However, this project was not successful and therefore the mitigation was not applied to any SMP-2 impacts.

Program Renewal Mitigation Approach

For the Program Renewal, Valley Water proposes a strategy that includes a return to the overall focus toward establishing permanent mitigation for impacts to jurisdictional habitats or sensitive species via the establishment of new PMAs. Because the existing SMP-1 PMAs provide permanent mitigation, no additional mitigation is required along reaches where PMAs for maintenance activities have already been established.

To determine future mitigation needs, Valley Water will quantify Program impacts on biological resources, such as the acreage of impacts to wetlands and riparian habitats, sensitive communities, and special-status species' habitats, on an annual basis as work is performed from 2027–2036. Valley Water will tally the impacts of Program activities for a specific year at the end of each year. These impact calculations will then be used as the basis for determining mitigation to be provided at either that year's end or the following year. This annual analysis will clearly distinguish where activities occurred (e.g., in a PMA versus in new areas for which mitigation is required).

Valley Water will establish new PMAs for Program Renewal maintenance activities that result in permanent impacts to jurisdictional habitats or sensitive species for: (1) different maintenance activities occurring along reaches that have existing activity-specific PMAs, and (2) any maintenance activities occurring along reaches without any existing PMAs (including new channel areas incorporated into the program). The goal is that, over time, Valley Water will establish PMAs along channels that are likely to require ongoing vegetation removal below top of bank and/or sediment removal.

Under the Program Renewal, Valley Water would create new PMAs in areas outside existing PMAs. PMA mitigation opportunities would create, establish, and/or provide suitable mitigation to address permanent impacts associated with annual repeated maintenance activities. Opportunities to provide suitable and high-quality mitigation to address the potential impacts to the channel's functions and values could occur through restoring existing Valley Water habitats or restoring or improving other watershed lands, or non-Valley Water maintained creeks, or other natural resources. Mitigation would be provided in perpetuity as it was for PMAs established during SMP-1.

Although this approach is similar to the PMA approach in SMP-1, the Program Renewal would develop additional PMAs that would target a smaller subset of high priority channels that require repeated annual maintenance and do not currently have PMA status.

The Program Renewal mitigation approach also plans to use remaining and available mitigation credit from mitigation projects established during SMP-1 to mitigate for new permanent impacts (i.e., Island Ponds, Pajaro Freshwater Wetland, and Landings project). Additionally, the Program Renewal mitigation approach would rely on the VHP, which is currently being amended[4] (amendment expected to be considered for approval in 2026, and the associated VHP In Lieu Fee (ILF) Program. The ILF Program is used to compensate for unavoidable impacts on Waters of the U.S. and Waters of the State and federally-listed anadromous fish. Specifically, the Program Renewal would comply with VHP conditions, pay impact fees in accordance with the types and acreage of habitat, and implement VHP-specified conservation measures. Obtaining coverage under the VHP could be a component of the proposed mitigation package, provided that the VHP's ILF program would make enough credits available for Valley Water to purchase to be able to compensate for Program Renewal impacts to regulated habitats and VHP-covered species. Incidental take approval for

[4] The VHP amendment includes the addition of new covered species, updates to the conservation strategy, adding the Program Renewal as a covered activity, expanding the VHP area boundary, and more.

VHP-covered federally listed species will be provided via the VHP for VHP-covered activities and species. Where take of state- or federally-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis.

Before the VHP is amended, if residual impacts from maintenance activities remain significant under CEQA after implementation of Valley Water's BMPs, Valley Water will provide compensatory mitigation for impacts on biological resources, as discussed in Section 3.4.4, "Impact Analysis" under *Mitigation Approach*.

Except for using remaining mitigation from mitigation projects established during SMP-1, it may be several years before Valley Water is able to fully implement these mitigation options due to the large scale of some of the mitigation projects and the time involved for completing the plan design and the permitting process for the projects. Accordingly, similar to the SMP-2 approach, providing mitigation on an annual basis for Program Renewal maintenance activities will likely be necessary while these longer-term approaches are developed. Valley Water's proposed approach for providing mitigation on an annual basis would be met through the following:

(1) Encampment cleanup and bank rehabilitation,

(2) A grant program to fund projects by local watershed groups and homeless community services, and

(3) Trash removal and additional mitigation options.

These options are described in the subsections below, and incorporated into some of the EIR mitigation measures in Section 3.4, "Biological Resources." Additional compensatory mitigation for impacts to sensitive species are described in Section 3.4, "Biological Resources."

To address impacts on the riparian corridor, Valley Water may develop reach characterization sheets for areas where frequent maintenance activities are projected to occur in 10-year Program Renewal period. These characterization sheets would be utilized to describe biological resources, water quality conditions, and overall ecological function within a channel reach; ongoing and future maintenance needs; and whether potential restoration opportunities exist within a reach. The characterization sheets may also be used to identify and map large trees with high importance and ecological value and describe potential opportunities for enhancing these trees. Reach characterizations could include descriptions of methods for maintaining individual reaches in a manner that has a neutral or positive effect on the reach's habitat function, therefore avoiding a need for separate compensatory mitigation.

Encampment Clean-up and Bank Rehabilitation

In recent years, Valley Water has observed a dramatic increase in encampment generated trash, debris, hazardous pollutants, and encampment-caused wildfires on Valley Water-managed creeks, channels, and lands. Collectively, the removal of riparian vegetation (both

intentionally during creation and "maintenance" of encampments and unintentionally as a result of dumping of trash and trampling) and the abundance of trash are perhaps the most readily noticeable environmental issues in creeks throughout many of the urban and suburban areas of Santa Clara County. The growth of encampments and trash have led to increased and substantial water quality and habitat impacts to the region's streams and flood protection channels. Fires originating at encampments have also resulted in the loss of extensive riparian habitat.

Valley Water may conduct encampment cleanup activities to compensate for habitat impacts. Encampment cleanup includes removing human-caused inorganic trash that is in, or positioned to enter, aquatic and riparian habitats. This would provide mitigation for impacts associated with vegetation management, sediment removal, and bank stabilization activities. Chapter 10 the SMP Manual (Appendix A) discusses proposed mitigation ratios for each impact type. Valley Water may also repair and rehabilitate stream banks and floodplains impacted by encampment-related excavation as mitigation for temporary or permanent bank stabilization impacts.

Grant Program to Fund Projects by Local Watershed Groups and Support Homeless Community Services

Valley Water is also considering developing a local grant or partnership program to help fund and implement watershed improvement projects led by local nonprofit agencies and Resource Conservation Districts (RCDs) and to help fund unhoused community services. Such a program may annually fund mitigation projects that are directly tied to the specific activities resulting in water quality impacts under the Program Renewal. Example projects that this program may support include habitat restoration, erosion control, and water quality improvement projects in the Program Renewal Area. Chapter 10 the SMP Manual (Appendix A) discusses proposed mitigation ratios for each impact type.

In addition, because the abundance of trash is one of the primary water quality issues in northern Santa Clara County's creeks, much of which is associated with unauthorized encampments, the grant program may also provide financial support to unhoused community services. Such services may include housing, employment, vocational services, mental health and recovery programs, and other related support services. By supporting such services, Valley Water would indirectly improve creek water quality by helping the unhoused community find more permanent housing solutions and move the unauthorized encampments out of Valley Water's creeks. Water quality would be improved due to the removal of trash, debris, and hazardous pollutants. There would be less obstructions to fish passage, and there would be less damage to fish and wildlife habitats.

Trash Removal

Trash removal work that occurs outside of encampment clean-up activities may serve as mitigation for vegetation removal and sediment removal activities that would result in impacts to wetlands/other waters of the U.S./state. Removing trash helps improve water quality and aquatic habitat for plant and terrestrial species. Chapter 10 the SMP Manual (Appendix A) discusses proposed mitigation ratios for each impact type.

Additional Mitigation Options

In addition to the annual mitigation approaches described above, this section describes additional mitigation options that may be implemented on an annual basis for Program Renewal activities. These measures are incorporated into some of the EIR mitigation measures in Section 3.4, "Biological Resources." These options may be implemented in addition to PMAs and the payment of VHP fees (if/when the VHP amendment is adopted) for the duration of the 10-year Program Renewal period, to allow flexibility. See Chapter 10 of the SMP Manual (Appendix A) and the Mitigation Monitoring and Reporting Program (MMRP) for additional details.

- **Revegetation**. As in SMP-2, this involves conducting revegetation activities to compensate for the loss of quality and quantity of riparian habitat resulting from SMP impacts. A typical planting palette, plant list, and proposed mitigation ratios are described in the SMP Manual (Appendix A).
- **Concrete Removal**. The removal of concrete would expand wetlands and/or waters of the U.S./state and will enhance riverine functions. This would provide mitigation for bank stabilization activities resulting in permanent impacts on wetlands/waters of the U.S./state.
- **Fishery Restoration Projects**. Valley Water envisions constructing one or more large mitigation project(s) that involve restoration of salmonid habitat through passage improvement; installation of habitat features such as LWD, gravel, and instream complexity; or other methods to improve streams' function as salmonid habitat. This type of mitigation project would provide mitigation for downed tree management work involving removal of LWD in anadromous salmonid creeks and/or impacts to salmonid habitat features associated with bank stabilization and sediment removal projects in salmonid creeks. The Coyote 10B, Stevens Creek Evelyn Avenue Fish Passage, and Pickell's Dam Removal mitigation projects are examples of projects that restore salmonid habitat.
- **VHP Impact Fees and ILF Program.** Even if the Program Renewal would not be covered under the VHP during the initial years of the Program Renewal period, paying VHP fees would be appropriate to mitigate Program Renewal impacts to VHP-covered species because these fees would directly benefit covered species in the South Bay region. This mitigation approach is consistent with the Habitat Agency's Voluntary Fee Payments Policy. In the event that Valley Water needs to remove large invasive trees in VHP-covered areas and depending on the habitat value provided by such trees, Valley Water may also pay VHP impact fees for the acreage of land cover that is modified by invasive tree removal activities. For removal of noninvasive trees greater than 6 inches dbh, tree planting and/or payment of VHP impact fees would provide mitigation for tree removals. Purchase of ILF credits would provide mitigation for impacts to waters of the U.S./state and compensate for Program Renewal impacts to regulated habitats in addition to VHP-covered species. Where take of state- or federally-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis.

- ~~**Reach Characterizations.** To address impacts on the riparian corridor, Valley Water may develop reach characterization sheets for areas where frequent maintenance activities are projected to occur in 10-year Program Renewal period. These characterization sheets would be utilized to describe biological resources, water quality conditions, and overall ecological function within a channel reach; ongoing and future maintenance needs; and whether potential restoration opportunities exist within a reach. The characterization sheets may also be used to identify and map large trees with high importance and ecological value and describe potential opportunities for enhancing these trees. Reach characterizations could include descriptions of methods for maintaining individual reaches in a manner that has a neutral or positive effect on the reach's habitat function, therefore avoiding a need for separate compensatory mitigation.~~
- **Post-Wildfire Recovery.** In situations where a large and destructive riparian wildfire occurs, Valley Water may propose restoration of ecosystem function following a wildfire as a mitigation option. Valley Water would submit the wildfire recovery plan as part of the NPW process and include a description of the mitigation proposal. Activities may include but are not limited to revegetation and hydroseeding to reduce erosion, invasive plant species control, road repair, and removing critical safety hazards (dead or dying trees) to promote and support habitat for animal and plant species. The plan will also describe success criteria, monitoring processes, and site maintenance.

2.11 PERMITS, APPROVALS, AND CONSULTATION REQUIREMENTS

Several federal and state regulatory agencies granted permits, approvals, and permit extensions to Valley Water to implement SMP-2 (for the 2013~~4~~-2023 period), some of which expired in 2023 and 2024. Specifically, permits from the U.S. Army Corps of Engineers (USACE), Central Coast Regional Water Quality Control Board (CC RWQCB), and California Department of Fish and Wildlife (CDFW) expired on December 31, 2023. The biological opinion from National Marine Fisheries Services (NMFS) expired on April 8, 2024 and the biological opinion from U.S. Fish and Wildlife Service (USFWS) expired on April 15, 2024. The permit from the San Francisco Bay Conservation and Development Commission (BCDC) expires on April 30, 2026. The SF Bay RWQCB Section 401 Water Quality Certification did not include an expiration date and will be valid until the SF Bay RWQCB issues a new Order.

The same above-described agencies (with the exception of the SF RWQCB) were asked to issue new or amended multi-year permits and approvals to authorize Valley Water to continue implementing the SMP between 2027 and 2036.

- USFWS confirmed that the change in expiration date did not change the effects analysis of jeopardy determination of their Biological Opinion and communicated that USACE can still request SMP projects to be appended to their Biological Opinion as needed (Griego 2022).
- USACE reinitiated consultation with NMFS on May 3, 2023 and NMFS prepared a Biological Opinion for a 3-year extension that is valid until December 31, 2026. USACE issued an extension of Regional General Permit 17 to December 31, 2026. Purchase of ILF

credits would provide mitigation for impacts to waters of the U.S./state and compensate for Program Renewal impacts to regulated habitats in addition to VHP-covered species.

- Where take of federally-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis. Where take of state -listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, incidental take coverage would be provided via Incidental Take Permits from CDFW, on an as-needed basis.
- CDFW extended the Lake and Streambed Alteration Agreement to December 31, 2028. This LSAA was amended in September of 2024 to include explicit coverage of concrete removal mitigation items and salmonid habitat feature mitigation items in the Pajaro watershed, which had been described in the SMP-2 Manual, but not explicitly described in the LSAA.
- The CCRWQCB extended the Section 401 Water Quality Certification to December 31, 2026.
- BCDC granted an amendment that will expire on April 30, 2026, and Valley Water has applied for an extension through December 2026.

Table 2-9 summarizes applicable permits and approvals that were proposed for renewal, the extensions and amendments that were granted, and the permits and approvals that would authorize Program Renewal activities. In addition to the permits and approvals listed in Table 2-9. state and local agencies would issue encroachment permits as needed to implement Program Renewal maintenance activities.

As CEQA responsible agencies, the state permitting agencies will utilize this SEIR (once it is certified) as the CEQA compliance document in issuing new permits once the extensions and amendments expire. If applicable, the USACE will use this SEIR as background information for Section 404 permit NEPA compliance, and the USFWS and NMFS will use this SEIR as background information for Section 7 consultation with the USACE once the extensions expire.

Table 2-9. Regulatory Agency Approvals and Extensions

Agency	Applicable Law/ Regulations Guiding Jurisdiction	Permit/Approval Description	Original Date of Issuance	Date of Expiration	Permit Extensions	Anticipated Year of Issuance for Program Renewal
NOAA National Marine Fisheries Service	Endangered Species Act (ESA) Section 7	Biological Opinion No: SWR-2011-3722	April 8, 2014	April 8, 2024	December 31, 2026	2027
U.S. Fish and Wildlife Service	Fish and Wildlife Coordination Act – Endangered Species Act	Biological Opinion Permit Number 08ESMF00-20212-F-0398	April 4, 2014	December 31, 2023	USACE can append projects to BO as needed through USACE permit extension date (December 31, 2026)	2027
U.S. Army Corps of Engineers (USACE)	CWA Section 404 – Section 10 of Rivers and Harbors Act of 1899	Regional General Permit No. 17 (USACE File No. SPN-1996-225250S)	April 22, 2021	December 31, 2023	December 31, 2026	2027
California Department of Fish and Wildlife (CDFW)	Fish and Game Code Section 1602	Lake and Streambed Alteration Agreement, Notification No. 1600-2011-0336-RD	September 25, 2014	December 31, 2023	December 31, 2028	2029
	Fish and Game Code Section 2081 (California Endangered Species Act)	N/A	N/A	N/A	N/A	TBD[5]

[5] Where take of state-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, incidental take coverage would be provided via Incidental Take Permits sought by Valley Water from CDFW, on an as-needed basis.

Agency	Applicable Law/ Regulations Guiding Jurisdiction	Permit/Approval Description	Original Date of Issuance	Date of Expiration	Permit Extensions	Anticipated Year of Issuance for Program Renewal
Central Coast Regional Water Quality Control Board	Porter-Cologne Water Quality Control Act – Clean Water Act (CWA) Section 401, Water Quality Certification	Certification No. 34319WQ06	May 19, 2020	December 31, 2023	December 31, 2026	2027
San Francisco Bay Regional Water Quality Control Board	Porter-Cologne Water Quality Control Act – CWA Section 401, Water Quality Certification	Waste Discharge Requirements and Water Quality Certification— Order No. R2-2020-0017	May 13, 2020	No expiration, effective until the San Francisco Bay RWQCB adopts a new Order.	N/A - current permit does not have expiration date	N/A - current permit does not have expiration date
San Francisco Bay Conservation and Development Commission	Federal Coastal Zone Management Act of 1972	Permit No. M1977-113.07 (Amendment No. 7)	April 16, 2021	April 30, 2026	April 30, 2026	2027

Table 2-10. SMP Best Management Practices

BMP Number	BMP Title	BMP Description
		General Avoidance and Minimization Measures
GEN-1	In-Channel Work Windows	**Ground-Disturbing Activities** All ground-disturbing maintenance activities will take place between June 15 and October 15 unless an extension is granted. These activities are summarized in Table 3-1 of the SMP Manual. No new instream sediment removal projects or bank protection work will be initiated after October 15. Requests for work window extensions must be submitted to the regulatory agencies by October 1, 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. Beyond October 15, with regulatory agency approval, work may continue if no significant rainfall (defined for the sake of all BMPs as 0.5 inch or greater within a 24-hour period within the subject watershed) is either forecasted[6] or observed. Following October 15, work shall cease for the season if significant rainfall is forecasted or observed. For vegetation removal that involves ground disturbance, work may continue until December 31 or until significant rainfall. Starting September 1, 72-hour weather forecasts will be monitored daily, and sites must be maintained so that they can be rapidly winterized[7] (implement control measures BMP GEN-25). <u>Work Extensions for Vegetation Removal, Post-Project Restoration, Tree Removal, and Certain Minor Maintenance Activities Involving Ground Disturbance</u> 1. <u>Salmonid Streams</u>: Work may continue until December 31, or until significant rainfall is forecasted or occurs. 2. <u>Other Streams</u>: a. No work shall occur within 24 hours prior to and following significant rainfall (forecasted or observed).

[6] 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.

[7] Winterization is the process of maintaining work sites and preparing work sites for rainfall with the appropriate BMPs to prevent erosion and sediment transport and protect water quality. Winterization occurs upon completion of work activities or, on incomplete projects, prior to the occurrence of forecasted rainfall with at least 25% chance of 0.10 inch in 24 hours.

BMP Number	BMP Title	BMP Description
		b. Work in streams may continue until December 31, or until significant rainfall (forecasted or observed). There are no restrictions on work within dry streams. New ground-disturbing minor maintenance activities that consist of grading, rocking, recompacting, and resurfacing maintenance roads or installing and maintaining trash booms that are initiated after October 15 must be completed in five days or less. Work Extensions for Sediment Removal (including minor maintenance sediment removal) Limits on the duration of extended in-channel work windows for sediment removal activities are as follows: 1. Salmonid Streams: For creeks supporting anadromous fish, the work window may be extended through October 31 (or until significant rainfall is forecasted or observed) if the sediment removal project will be at least 50% complete by October 15. 2. Other Streams: For creeks not supporting anadromous fish (with the exception of reaches listed under #3 below), the work window may be extended through November 30, or until significant rainfall is forecasted or occurs, whichever occurs first. 3. Extended Work Window Reaches: For 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), which are hereby defined as Extended Work Window Reaches, the work window may be extended through December 31 with the following conditions: o Site conditions are dry, and access for all construction equipment and vehicles will not impact waterways. o All work will stop if any rainfall is forecast for the next 72-hour period. o Work may occur after a significant rainfall event, but no later than December 31. Work Extensions for Bank Stabilization and Management of Animal Conflicts (with ground disturbance) Bank stabilization and management of animal conflicts with ground disturbance projects may continue until the approved dates specified below. Prior to a forecasted significant rainfall event, all incomplete bank stabilization projects must be winterized. 1. Salmonid Streams: In creeks supporting anadromous fish, the work window may be extended until October 31 (or until significant rainfall is forecasted or observed) if the bank stabilization/animal conflict project will be at least 50% complete by October 15. 2. Other Streams: In creeks not supporting anadromous fish: o The work window may be extended until November 30 (or until significant rainfall is forecasted or observed) if the bank stabilization/animal conflict project will be at least 50% complete by October 15. Certain new projects that will be completed in 5 days or less may

BMP Number	BMP Title	BMP Description
		not be 50% complete by October 15. ~~and for new bank stabilization projects that will be completed in five (5) days or less.~~ **Activities That Do Not Result in Ground Disturbance** Work in this category may include vegetation removal and pruning, mowing, management of animal conflicts, and minor maintenance activities that do not result in ground disturbance. These activities are summarized in Table 3-1 of the SMP Manual (Appendix A). Instream activities within the wetted portion of the channel may occur year-round in all streams (including salmonid streams), except when wheeled or tracked equipment needs to access the site by crossing a creek, ponded area, or secondary channel. No work shall occur within 24 hours prior to or following significant rainfall. Work within streams that support anadromous fish outside of the June 15 through October 15 work window must adhere to the following conditions: • Applicable pre-activity surveys and biological monitoring must be performed (BMP GEN-6 through GEN-19, as applicable). • Modification and removal of instream large woody debris will occur as described in the NMFS Biological Opinion. • When work occurs in the wetted channel, within seven days before the start of work, a qualified biologist will survey for sensitive fish species, especially steelhead and redds, within the work area. • A qualified biologist must be on-site to monitor work that occurs in the wetted channel. The biologist will notify crews of the locations of any redds and ensure that direct impacts on redds and sensitive fish species (especially steelhead) are avoided during work activities. As needed, the monitor will advise work crews regarding how to minimize impacts on sensitive fish species and their habitat (e.g., minimizing the footprint of the work area and access routes).

GEN-2	Instream Herbicide Application	<u>All Streams</u> Instream (below ordinary high water) herbicide applications will take place between June 15 and October 15. The work window may be extended until either December 31 or until significant rainfall is forecasted or observed. In addition, herbicide application requirements are as follows: • Herbicides shall not be applied directly to water. • Valley Water shall not apply herbicide when wind speeds exceed 10 miles per hour. Valley Water will use herbicides with the following active ingredients as part of the Program Renewal: aminopyralid, aminopyrali + triclopyr, aminopyralid + florpyrauxifen-benzyl, clopyralid, dithiopyr, ethyl oleate, glyphosate, imazamox, imazapyr, isoxaben, paraffinic oil, triclopyr, and triclopyr-choline. As described in Chapter 4.3.7 of the SMP Manual, Valley Water may in some cases substitute other materials as they become available. Any new materials incorporated into Program Renewal herbicide application will be subject to any relevant injunctions. <u>2014 Salmonid Injunction</u> None of these ingredients are subject to the August 15, 2014, injunction for salmonids, which includes restrictions related to protecting streams mapped as critical habitat for Central and South-Central California Coast steelhead. Thus, the restrictions described in this injunction do not apply to Valley Water herbicide use under the Program Renewal. <u>2010 Bay Area Listed Species Injunction</u> Valley Water will not be using chemicals subject to this injunction. <u>2006 California Red-Legged Frog Injunction</u> Seven of these active ingredients are subject to the October 20, 2006, injunction that applies to the California red-legged frog: aminopyralid + triclopyr, glyphosate, imazapyr, triclopyr, and triclopyr-choline. The following restrictions apply to the use of herbicides with these active ingredients within (1) designated critical habitat for the California red-legged frog and (2) additional California red-legged frog habitat areas shown on Figure A-1 of the SMP Manual. • Herbicides with these active ingredients may not be used within 60 feet (for ground use) or 200 feet (for aerial use) from the edge of aquatic breeding, aquatic nonbreeding, or upland habitat. • Exceptions to these restrictions are as follows: o For the state-designated invasive species[8,9] and noxious weeds, with the following conditions: ▪ The herbicide is not applied within 15 feet of aquatic breeding or non-breeding habitat. ▪ Application is limited to localized spot treatment using hand-held devices. ▪ Precipitation is not occurring or forecast to occur within 24 hours. ▪ The herbicide is applied by a certified applicator or an individual working under the direct supervision of a certified applicator.

BMP Number	BMP Title	BMP Description
		○ For herbicides applied for the following uses: ▪ Tree injection applications ▪ Localized spot treatments using handheld devices on rights-of-way, roadsides, pastures, lawns, or in forests are permitted, provided that such use occurs at least 60 feet from the edge of aquatic breeding or nonbreeding habitat. ▪ Individual tree removal using cut stump application is permitted, provided that such use occurs at least 60 feet from the edge of aquatic breeding or nonbreeding habitat. ▪ Basal bark application to individual plants, provided that such use occurs at least 60 feet from the edge of aquatic breeding or nonbreeding habitat.

[8] A list of state-designated invasive species can be found at https://cal-invasives.net/home/species.html.

[9] A list of state-designated noxious weeds can be found at https://www.cdfa.ca.gov/plant/IPC/encycloweedia/winfo_weedratings.html.

BMP Number	BMP Title	BMP Description
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 of 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 of 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 of 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 on 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 Resource Measures		
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	Protection of Nesting Birds	Nesting Bird Survey Methodology Biological Review of Project: Maps and photographs of the project location will be reviewed by a qualified biologist before a survey is conducted. The survey area will be determined using maps of the projected access, staging, and work areas. A qualified biologist will review the survey area and project details to determine if nesting bird survey can be

BMP Number	BMP Title	BMP Description
		conducted by a designated individual (DI) in place of a qualified biologist. A qualified biologist may determine a DI can conduct the nesting bird survey prior to pre- and post-emergent herbicide application along maintenance roads or for mowing activities in ruderal areas with minimal nesting substrate (<10% canopy cover) when a nest can be easily detected. If a qualified biologist determines it is appropriate for DIs to conduct the nesting bird survey, the qualified biologist will provide written direction to the vegetation management team allowing for DI survey. DIs will follow the survey protocol outlined in Section 2. For all other projects, a qualified biologist will conduct a nesting bird survey following the protocol outlined below. Survey Location: A qualified biologist shall perform a nesting bird survey throughout the entirety of the work area (including access and staging areas), as well as a 100-foot buffer beyond the designated perimeter of the project area when possible (depending on access and property lines/limits). Suitable nesting habitat within the survey area will be identified to help determine what species may be present and what type of nests could be expected. Survey Timing: Seasonal timing: Nesting bird season begins January 15 and ends September 1. Some of the local bird species in Santa Clara County are known to nest outside of the established nesting season (ex: Anna's hummingbirds begin nesting in late December some years); precautionary nesting bird surveys may be conducted year-round by Valley Water qualified biologists to account for birds that nest out of season. Session timing: A qualified biologist will conduct a nesting bird survey during daylight hours, beginning at dawn. Surveys will not be conducted in instances of excessive or abnormal cold, heat, wind, rain, or other inclement weather that may interfere with nest detection or reduce bird activity. The biologist will spend a minimum of 5-10 minutes of quiet observation at the beginning of each survey to assess bird activity level before slowly walking through the survey area in search of nests and nesting behavior. The amount of time spent for each survey will vary based on size of survey area, habitat and density of vegetation present, type of work to be conducted, time of year, etc. Survey techniques: A qualified biologist will quietly observe the project area at the beginning of each survey to assess bird activity level. The qualified biologist will then walk slowly through the survey area, using passive visual and auditory observation to detect all bird nests in and around the survey area. If nests cannot be identified, but a nest is

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		suspected due to observed bird behavior or aural cues, the qualified biologist will flag the area and create an ample buffer for any suspected or potential nests. Circumstances such as terrain, vegetation, season, likely species present, built environment, presence of human activity, and activity for which the survey is occurring can be factors in determining the most effective strategy of surveying for nesting birds. Qualified biologists shall use professional judgement based on expertise, experience, and site knowledge to determine appropriate walking patterns and other details of survey strategy. The area that the qualified biologist surveys in any survey will be limited to an area where work is estimated to be completed within seven days. In some cases, one qualified biologist will conduct the survey. In other cases, multiple biologists will conduct the survey, where it is either determined that multiple biologists would be more effective or when working alone is unsafe due to situations such as encampments or criminal activity. Number of surveys: One nesting bird survey will be conducted within 7 days prior to the start of work. A second or follow-up survey may be conducted on a separate day in the case of high bird activity, decreased bird activity/detection due to unfavorable survey conditions (such as a change in weather, noise disturbance, or time of day), and/or in any case whereby the qualified biologist cannot confidently identify all bird nests in the project area. Qualified biologist will provide justification for number of bird surveys performed for each work order and documentation of justification will be provided to CDFW. If a lapse in project-related work of 7 days or longer occurs, another survey will be conducted before project work can be reinitiated. Delaying work: Activities that post an elevated risk of impacting nesting birds will be conducted outside of the local peak of nesting bird season (as determined by a qualified biologist). Qualified biologist will delay vegetation removal work if 3 or more nests are detected in the work area, if the biologist cannot confidently survey the entire work area due to dense vegetation, and/or if there is high nesting bird activity and all suspected nests cannot be confidently identified and buffered within the project area. In the case of work being delayed for 3 or more nests having been detected in the work area, a qualified biologist may recheck nests at a later date. When the qualified biologist confirms that all nests in the work area that were detected during the initial survey are no longer active (the nest has failed or the chicks are

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		fledged), the entire work area may be resurveyed by a qualified biologist. If the qualified biologist detects two or less nests during the resurvey, the nests will be buffered, and work will proceed outside of the buffered areas. Flagging and Buffering Nests: If an active nest (i.e., a nest with eggs or young) is found or suspected, a buffer will be established and maintained until the young have fledged. Standard buffer widths are 0.5 mile for bald and golden eagles; 250 feet for other raptors, least Bell's vireo, herons, and egrets; 50 feet for ground-nesting non-raptors; 700 feet for California Ridgway's rail or California black rail; 600 feet for California least tern and western snowy plover; and 50 feet for non-raptors nesting in trees, in shrubs, and on structures. A qualified biologist may identify an alternative buffer (larger or smaller) for individual nests on a case-by-case basis based on site-specific consideration of the species, the nature of the work, the height of the nest, intervening vegetation or topography buffering the nest from the work, pre-existing human activity to which the birds are already habituated, and other factors. The boundary of each buffer zone will be marked with flagging. The buffer zone will be maintained until the nest is no longer active, as determined by a qualified biologist. Data Management: Qualified biologists will document all observed and suspected nests in a shared geospatial database. Qualified biologists will record location of nest, date of survey, work order number, surveyor name, nesting bird species, photos, and any relevant notes. Nest map and nest details are immediately available to all biologists and field crews. Designated Individual (DI) Training and Survey Protocol DI Training Program Valley Water maintenance workers and contractors will complete a yearly mandatory classroom training on survey methodology, nest identification, and nest buffer protocol before nesting bird season begins. The classroom training will include survey demonstrations by Valley Water biologists, an overview of common nests found in Santa Clara County, nesting bird behavior, and a detailed overview on how to flag and buffer nests. Valley Water staff will also be required to complete a practical biannual (every other year) field training on DI survey protocols, nest identification, and binocular use. All field trainings will be led by Valley Water wildlife biologists during the nesting season (January 15 to September 1) and will emphasize quality over speed of surveys. DIs will be provided with a DI Handbook that outlines DI survey protocol and pictures and

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		descriptions of common nests found in Santa Clara County. Supplemental field training will be provided throughout the nesting bird season by Valley Water wildlife biologists. Throughout the season, qualified biologists will meet DIs in the field to observe DI surveys and provide suggestions and adjustments as needed. DI Survey Protocol Pre- and Post-Emergent Herbicide Activities: DIs will conduct a passive observational and auditory survey of the daily work area during daylight hours, beginning at dawn, in appropriate meteorological conditions, to identify any birds exhibiting potential nesting behavior. The observation of the work area and surroundings will take place over enough time to detect nesting birds. The survey time will vary based on the size and characteristics of each site but a minimum of one hour per one acre of potential nesting substrate will be spent on the survey. If nesting behavior is observed, DIs will identify, flag, and buffer the nest area. If nests cannot be identified, but a nest is suspected due to observed bird behavior or aural cues, the DI will flag the area and create an ample buffer for any suspected or potential nests. Mowing Activities: The enhanced DI survey protocol for mowing activities will involve two surveys led by trained DIs and will require DIs to walk ahead of mowing crews. These methods are outlined in greater detail below. The first survey will be a passive observational and auditory survey of the daily work area to identify any birds exhibiting potential nesting behavior. The observation of the work area and surroundings will take place over enough time to detect nesting birds. The survey time will vary based on the size and characteristics of each site but a minimum of one hour per one acre of potential nesting substrate will be spent on the survey. If nesting behavior is observed, DIs will identify, flag, and buffer the nest area. If nests cannot be identified, but a nest is suspected due to observed bird behavior or aural ques, the DI will flag the area and create an ample buffer for any suspected or potential nests. After the passive observational and auditory survey, a stick or rope drag survey will be conducted prior to mowing work in the daily work area. The DIs will walk through the project area using stick or rope drag methods to disturb the grass while avoiding contact with the ground. Rope drag surveys will be conducted using a lightweight rope held by two individuals walking at the same pace through the survey area. Another trained DI equipped with binoculars will stand 70 feet behind the stick or rope and monitor for any potential activity that reveals nesting birds. If a bird is flushed, the DI will stop the survey, wait for bird to return to nest, and flag and buffer nest area. If the DI does not observe the bird return to the nest, no work will occur in the area.

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		Finally, DIs will walk ahead of active mowing crews to watch for flushing birds. If a bird is flushed, the DI will stop work and wait for the bird to return to the nest, and flag and buffer nest area. If the DI does not observe the bird returning to the nest, no work will occur in the area. Flagging and Buffering Nests: Standard buffer widths are 0.5 mile for bald and golden eagles; 250 feet for other raptors, least Bell's vireo, herons, and egrets; 50 feet for ground-nesting non-raptors; 700 feet for California Ridgway's rail or California black rail; 600 feet for California least tern and western snowy plover; and 50 feet for non-raptors nesting in trees, in shrubs, and on structures. The boundary of each buffer zone will be marked with flagging. The buffer zone will be maintained until the nest is no longer active, as determined by a qualified biologist. Data Management: Senior Maintenance Workers will document the time spent conducting DI surveys in the daily Maximo log. DIs will document area surveyed, time spent conducting survey, and all observed and suspected nests in the DI Field Survey Data Sheet (**Error! Reference source not found.**). All nests recorded in the DI Field Survey Data Sheet are automatically included in the biological resources map and nest information is immediately available to biologists and field crews. Qualified biologists will review DI survey logs and identified nests throughout nesting bird season. Nest Disturbance: In any case of a nest disturbance or take of nesting birds, a CDFW representative will be notified within 24 hours. In cases where a nest has been disturbed but left in place, a qualified biologist will check on the nest later that day and/or the following day to determine the state of the nest. After the nesting bird incident, Valley Water will investigate the nesting bird incident and prepare a full report of the incident. This full report will be submitted to CDFW within 90 days, though Valley Water will strive to submit the report within 30 days.
GEN-6.1	Protection of Alameda Song Sparrow and San Francisco Common Yellowthroat	Pre-activity surveys for the Alameda song sparrow and San Francisco common yellowthroat will occur using the general procedures described in BMP GEN-6. Individual song sparrows will be determined to potentially be Alameda song sparrows if they occur within the range indicated in Figure A-2 (included in Attachment A of the SMP Manual). This subspecies typically occurs in tidal salt marsh and brackish marsh, though it also occurs in nontidal salt marsh having sufficiently dense/tall vegetation; it could potentially occur in reaches of mixed brackish/fresh marsh; and it also occurs in dense vegetation at upland/wetland edges adjacent to any of the wetland types described above. Individual common yellowthroats will be determined to potentially be San

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		Francisco common yellowthroats if they occur within the range indicated in Figure A-2 of the SMP Manual, regardless of the habitat type in which they are found. If a pre-activity survey occurs within the range of the San Francisco common yellowthroat and/or Alameda song sparrow (see Figure A-2 of the SMP Manual) during their nesting season (defined as February 25–August 15), one of the following survey methods will be used to ensure the protection of active nests of these species: 1. If the biologist identifies more singing male song sparrows and/or common yellowthroats than active nests, inconspicuous nests of these species may have been missed. In this case, maintenance activities in the area will be delayed until after the nesting season. 2. If individuals of these species are found during pre-activity surveys and Valley Water wishes to perform breeding-season work near occupied habitat, the biologist will map the territories of common yellowthroats and song sparrows during the pre-activity survey by observing the movements and behaviors of individuals. Nesting within this mapped area will be assumed, and territories will be buffered by 50 feet.
GEN-6.2	Protection of Nesting Least Bell's Vireos	**Areas with Greatest Potential for Nesting Least Bell's Vireos** To the extent feasible, SMP activities occurring in areas with the greatest potential to support nesting least Bell's vireos (Pacheco Creek, the Pajaro River, and reaches of Uvas/Carnadero Creek and Llagas Creek downstream from Highway 152) shall be scheduled to occur outside of the least Bell's vireo nesting season (March 15 through July 31). If it is not feasible for maintenance activities along these reaches to be scheduled during the non-nesting season, the measures listed under *Pre-Activity Surveys* below will be implemented. <u>Pre-Activity Surveys</u> For maintenance activities that will result in minimal noise, do not require heavy equipment (with the exception of a mower operated outside the riparian corridor), are limited in duration (60 minutes or less), and require no more than 3 personnel, pre-activity surveys will be performed within the work area and a surrounding buffer of 100 feet. For all other maintenance activities, pre-activity surveys will be performed within the work area and a surrounding buffer of 250 feet. Pre-activity surveys will be performed as follows: 1. Work will be preceded by a focused survey for at least Bell's vireos within two calendar days before the initiation of maintenance activities. The survey will be conducted between dawn and 11:00 a.m., during mild weather conditions (i.e., not during excessive cold, heat, wind, or rain), and within all riparian habitat in and within 100 or 250 feet of any proposed maintenance location along these reaches, as applicable. The survey will be conducted by a qualified biologist who is familiar with the visual and auditory identification of this species. The biologist should not survey more than 3 linear kilometers or 50 hectares

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		of habitat on any given survey day. The numbers and locations of brown-headed cowbirds detected within vireo territories will be recorded. 2. To avoid last-minute changes in the work schedule if an active nest is found, a preliminary survey may be performed more than 2 calendar days prior to the start of maintenance activities. 3. To minimize impacts on 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 for and listen to 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, carrying food, or repeatedly visiting a certain area. 4. If one or more least Bell's vireo nests are detected, the measures listed under *Protection of Active Nests* below will be implemented. <u>Protection of Active Nests</u> 1. If an active nest is found, a minimum 250-foot no-activity buffer will be established around the nest; for low-impact activities described above, a 100-foot buffer is appropriate if a qualified biologist monitors the birds during the activity and determines that the birds are not disturbed by the activity (if disturbance is observed, the buffer will be increased until the birds show no signs of disturbance). 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 exist 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 distances for these activities on a case-by-case basis. 2. 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. 3. If a least Bell's vireo and/or its nest are detected during pre-activity surveys, Valley Water will contact the USFWS and CDFW within two working days regarding the presence and location of the bird/nest. **Other Areas with Riparian Habitat within the Pajaro River Watershed** In other areas that provide potential least Bell's vireo habitat within the Pajaro River watershed, outside of the areas described above as having the greatest potential to support this species, pre-activity surveys will be conducted concurrently with surveys for other nesting birds following the procedures described in GEN-6.
GEN-7	Protection of Burrowing Owls	Pre-Activity Surveys During the nesting season (defined as February 1 to August 31), pre-activity surveys for burrowing owls will be performed as part of the nesting bird survey described in BMP GEN-6.

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		During the nonbreeding season, a qualified biologist will conduct a desk audit to determine if high-quality habitat for burrowing owls (i.e., burrows of California ground squirrels and adjacent open grassland areas) is present within the work area. If (1) suitable habitat is present within the work area and (2) maintenance activities would potentially cause suitable burrows for this species to be crushed or blocked, a pre-activity survey will be performed within 7 days of the start of work activities. Regardless of the time of year, if a burrow with signs of burrowing owl presence (e.g., whitewash, pellets, and/or feathers) is observed during the pre-activity survey but no burrowing owl is present, a second survey will be performed within 24 hours prior to the start of work to determine whether burrowing owls are present. The survey shall occur between morning civil twilight and 10:00 a.m., or between two hours before sunset and evening civil twilight, to provide the highest detection probability. If no burrowing owls are found during the pre-activity surveys, the work may proceed. If burrowing owls are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. Protection of Individuals 1. If occupied burrows are identified, a 250-foot radius no-work buffer zone will be established around the burrow. No maintenance activities will occur within the 250-foot buffer zone during the nesting season (defined as February 1 to August 31). However, the buffer may be reduced with CDFW approval to take into consideration paved roads, intervening riparian corridors, levees, the nature of the work, and other factors that might indicate a reduced buffer would be adequate. 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. If work is not covered by the VHP, Valley Water will consult with CDFW prior to any excavation of burrows. e. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

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		5. Exceptions: a. Routine Use of Levee Roads: Routine use of existing Valley Water maintenance roads within the 250-foot buffer will be allowed year-round. However, no traffic involving loud/heavy equipment associated with sediment removal or bank stabilization will be allowed to use the maintenance road in a burrowing owl buffer during the active nesting period. b. Mowing: Mowing on levees may occur within 250 feet of active burrows year-round with the following conditions: i. A qualified biologist will monitor mowing within the buffer zone. ii. Active burrows will be marked by a qualified biologist. Markers shall be placed immediately prior to mowing and removed immediately following mowing, to avoid alerting predators to burrow locations. iii. No vehicle-mounted mowers will be used within 10 feet of occupied burrows. Areas within 10 feet of occupied burrows may be mown quickly using hand equipment (e.g., string trimmers) when no owls are visible on the surface. iv. All mowing activities within the buffer zone will be completed within 30 minutes.
GEN-8	Avoid and/or Minimize 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 CDFW protocols and the *CNPS Botanical Survey Guidelines* to formulate the following protocols: 1. A qualified botanist will use Valley Water's GIS database, the CNDDB, Santa Clara Valley Habitat Plan (VHP) data, and/or other suitable tools to identify potential locations of special-status plants and sensitive natural vegetation communities within or near work areas. 2. All activities within serpentine areas will be avoided, including herbicide application. 3. Within non-serpentine areas, protocol-level surveys within areas identified as sensitive natural communities or suitable habitat for special-status plant species will be conducted by a qualified botanist within 1 year prior to commencement of work. If these surveys detect an occurrence of special-status plants, this occurrence will be submitted to CNDDB. 4. Surveys will be conducted during the appropriate time of the year (i.e., the target species' blooming period) to adequately identify special-status plants that could occur on or immediately adjacent to the site of proposed maintenance activities. 5. For all maintenance activities, impacts to sensitive natural communities and special-status plants identified by the qualified botanist will be avoided and/or minimized. The qualified botanist will recommend one or more of the following measures, as appropriate, to avoid and/or minimize impacts: a. Flag or otherwise delineate in the field the special-status plant populations and/or sensitive natural community to be protected.

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		b. Maintain an adequate no-disturbance buffer around plants or habitat. The location of the buffer will be shown on the maintenance design drawings and marked in the field with stakes and/or flagging in such a way that the buffer is 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 to occur during periods of the year when the plant species is dormant and/or in a non-critical life cycle period. This is more appropriate for annual plants rather than perennials. d. Store removed sediment off site. e. Limit the operation of maintenance equipment to established roads whenever possible. 6. If any individual special-status plants are impacted, regardless of the extent of the impact, Valley Water will collect and bank seed with an accredited institution to facilitate potential future restoration opportunities and conserve the population's genetic diversity. 7. For vegetation management activities: a. 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. b. If special-status plant species or sensitive communities are present, the qualified botanist will determine if a given type of vegetation management method is ecologically appropriate for a given area. Alternative strategies based on the botanist's recommendations will be coordinated with appropriate staff.
GEN-9	Protection of Monarch Butterflies	1. A qualified botanist or Designated Individual will use Valley Water's GIS database and/or other suitable tools to identify milkweed within or near work areas. The database of milkweed locations will be updated on an ongoing basis based on the observed distribution of milkweed in Program work areas. 2. If milkweed is present, a qualified botanist will determine if a given type of vegetation management method is ecologically appropriate for a given area. Alternative strategies based on the botanist's recommendations will be coordinated with appropriate staff. 3. To the extent feasible, maintenance activities along stream reaches supporting known concentrations of milkweeds will occur between September 1 and March 15, when monarch eggs and larvae are absent. 4. If work occurs within areas supporting milkweed concentrations between March 15 and October 31, a qualified biologist or Designated Individual will conduct a pre-activity survey for milkweed prior to the start of work activities. a. The maintenance activity will maintain an adequate no-disturbance buffer around milkweed plants. The location of the buffer will be marked in the field with stakes and/or flagging in such a way that the buffer is visible to maintenance personnel without excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing).

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		c. No herbicides, terrestrial or aquatic, will be used in areas where milkweed concentrations are present. Anticipating the potential need for milkweed seed for mitigation projects in the future, Valley Water staff would also collect milkweed seed in association with their SMP mowing. Seed collection would be done with as minimal disturbance to the plant as practicable.
GEN-10	Protection of Crotch's Bumble Bees	VHP-covered activities will comply with applicable VHP conditions to protect Crotch's bumble bee. For non-VHP-covered activities, Valley Water will follow the procedures in the Final SMP Crotch's Bumble Bee Avoidance Plan (Valley Water 2024) to avoid and minimize impacts on the species. The measures in the Plan are as follows, described in greater detail in the Plan: • Annually train field staff and designated individuals (DIs) prior to the construction season how to identify insects such as bumble bees, how to recognize bumble bee nesting behavior, how to avoid impacts to individual bumble bees, and when to contact a qualified biologist for additional investigation of bumble bee occurrences or potential nests. • Have a qualified biologist assess habitat suitability to determine if the activity occurs in an area providing suitable habitat for foraging or nesting CBB, and if so, identify areas providing suitable habitat to inform surveys. • Have a qualified biologist conduct surveys to determine whether foraging CBB and/or CBB nests are present. • If a CBB nest is present in the work area, implement a no-disturbance buffer around the nest and provide a biological monitor until it is determined the buffer is sufficient to protect the nest. If CBB are present in the work area, provide a biological monitor until CBB are no longer present. • If no CBB nests or adults are present, no further surveys need to be done for the remainder of the flight season. However, depending on the project activities, a qualified biologist may need to be onsite to prescribe additional surveys and/or monitoring to meet the requirements of the avoidance and minimization measures for CBB. 1.
GEN-11	Avoidance and protection of Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail	1. For maintenance activities occurring within the range of the salt marsh harvest mouse (SMHM), California Ridgway's rail (CRR), or California black rail (CBR), as defined in Valley Water's GIS layers, a qualified biologist will conduct a desk audit to determine whether potentially suitable habitat for one or more of these species may be present within, adjacent to (defined as within 50 feet for SMHM, 50 feet for CRR and CBR outside the nesting season, and 700 feet for CRR and CBR during the nesting season) of the

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		maintenance activity area, including both work locations and access routes. The nesting season for CRR and CBR is defined as February 1 to August 31. 2. All SMP activities within 700 feet of occupied or potentially occupied CRR or CBR nesting habitat, as determined by a qualified biologist, shall be avoided during the nesting season, with the following exception: a. CRR are assumed to be nesting within 700 feet of the Palo Alto Flood Basin tide gate, albeit on the outboard side of the levees (e.g., on Hooks Isle or in the Palo Alto Estuary) rather than in the Palo Alto Flood Control Basin, and SMHM may be present in vegetation near the tide gate. If a blockage at the Palo Alto Flood Basin tide gate occurs, trash and debris removal may be performed under the following conditions: i. Trash and debris removal shall occur at the Palo Alto Flood Basin tide gate in January prior to the nesting season of each year to minimize the potential of a blockage accumulating during the nesting season. ii. Blockages will only be cleared during the nesting season in response to an immediate and urgent issue (rather than as part of regular maintenance activities). It is expected that blockages will only need to be cleared once or twice during the Program Renewal period. If blockages require clearing more frequently, this exception will be revisited in consultation with the CDFW and USFWS. In cases where tide gate blockages need to be cleared in response to an immediate and urgent issue during the nesting season, Valley Water will notify CDFW within 24 hours following the work. iii. A qualified biologist familiar with the identification and biology of the CRR and SMHM will monitor the removal of trash and debris from the tide gate. The biologist will perform the following duties: 1. Provide recommendations to minimize noise and visual disturbances to CRR nesting in nearby areas, especially for activities on the downstream side of the tide gate, and to avoid impacts on SMHM. 2. Ensure that activities are limited to the minimum necessary to clear the blockage sufficiently for the remainder nesting season, and no more than 2 hours in duration. 3. Stop work if a SMHM is observed in, or a CRR is observed within 50 feet of the work area. 3. Within seven days prior to work within or adjacent to suitable habitat, a qualified biologist will survey the work area, access routes, and immediately adjacent areas (defined as areas within 50 feet) to identify suitable habitat areas for SMHM, CRR, and CBR. Specific habitat areas are defined as tidal habitat with vegetated areas of cordgrass, marsh gumplant, pickleweed, alkali heath, bulrush, and other marsh vegetation; brackish marsh reaches of creeks with heavy accumulations of bulrush thatch (old stands); and high-water refugial habitat that may include annual grasses and shrubs immediately adjacent to the marsh

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		vegetation described above. If rails are observed during this survey, a qualified biologist will conduct an additional survey immediately prior to initiation of SMP activities. A no-disturbance buffer (minimum of 50 feet) will be implemented. 4. Activities located within or immediately adjacent to (i.e., within 50 feet of) suitable 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 individuals from reaching available cover or flush them from high-water refugia. 5. Within the identified suitable habitat areas, vegetation will be removed by hand from areas to be directly impacted by the work activities if possible (hand removal of vegetation in some channels may not be possible). Within the mapped range of these species but outside of areas identified as suitable habitat, other methods (e.g., mechanized hand tools or mowing) may be possible. Mowing using heavy equipment (tractors, boom mowers, and rider mowers) will not be conducted in habitat areas or within 50 feet of habitat areas. 6. If suitable habitat occurs within or adjacent to (defined as within 50 feet of) the work area, a qualified biologist will conduct a pre-activity survey of all suitable habitat that may be directly or indirectly impacted by the day's activities (work area, access routes, staging areas). This survey will be conducted prior to the initiation of work each day for all vegetation management activities including ground or vegetation disturbance, operation of large equipment, grading, sediment removal, and bank stabilization work. a. If during the initial daily survey or during work activities, a CRR or CBR is observed within or immediately adjacent to the work area (defined as within 50 feet), work will be suspended until the individual leaves the area on its own. b. If, during the initial daily survey or during work activities, a SMHM, or an animal that could potentially be a SMHM, is observed within or immediately adjacent to the work area (defined as within 50 feet), initiation of work will be delayed until a *plan* can be developed and implemented by a qualified biologist to protect the rodent. 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 USFWS with a suggested course of action and seek concurrence. 7. If work is necessary within 50 feet of suitable habitat areas, the qualified biologist will remain on-site to monitor the work. 8. If dense herbaceous vegetation (e.g., fennel with dense bases) or dense woody vegetation (e.g., coyote brush) will be removed, it may be difficult for the qualified biologist to detect individual SMHM, or nests

BMP Number	BMP Title	BMP Description
		of this species, before the vegetation is removed. To ensure that any individuals or nests of this species are detected, the following procedures will be followed: a. A qualified biologist will search the vegetation for SMHM and their nests. If they are able to adequately survey the entire plant, then a chainsaw or other mechanized equipment may be used to remove the vegetation. If the biologist is not able to adequately survey vegetation to be removed due to the presence of dense vegetation, they will initially search as much of this vegetation as feasible (e.g., the upper, less dense portions). b. At the direction of the biologist, the maintenance crew will use either mechanized or non-mechanized hand tools to remove the portion of the vegetation that the biologist was able to search adequately (e.g., the outer branches or upper portion of the plant) under close supervision. Mechanized hand tools may be appropriate for large woody vegetation or tall herbaceous vegetation (such as weeds on levees), and non-mechanized hand tools may be appropriate for dense herbaceous marsh vegetation (such as pickleweed). c. Once the outer/upper portions of the vegetation have been removed, the biologist will then re-survey the remaining vegetation. d. This process (a–c) will be repeated iteratively until the biologist is able to search all vegetation thoroughly and the vegetation has been removed. 9. See ANI-2 for restrictions on pesticide use near SMHM, CRR, and CBR habitat. 10. If visual observation cannot confirm that a SMHM, CRR, or CBR has 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 CDFW and USFWS have been contacted for guidance. 11. When grazing occurs in or near SMHM habitat, a qualified biologist will guide fence installation to exclude grazing animals from SMHM-specific habitat. Once exclusion fencing has been installed, a biologist does not need to be on site to monitor grazing.
BMP GEN-12	Protection of California Red-Legged Frogs and California Tiger Salamanders	A qualified biologist will conduct a desk audit to determine whether suitable habitat for California red-legged frogs (CRLF) and/or California tiger salamanders (CTS) is present in or adjacent to a maintenance activity based on all available information, including the habitats modeled in the VHP. If the qualified biologist determines that one or both of these species are likely to be encountered within the work area, the pre-activity surveys described below will be performed. <u>Pre-Activity Surveys (for Activities Not Covered Under the VHP)</u> 1. A qualified biologist will conduct a single daytime survey within a 7-day period preceding the onset of maintenance activities. 2. If the qualified biologist conducting the desktop audit determines a high likelihood that CRLF and/or CTS may be encountered during the work, an additional nighttime survey will also be conducted.

BMP Number	BMP Title	BMP Description
		3. If an individual CRLF and/or CTS is observed within the work area during either the daytime or nighttime pre-activity survey, the following additional surveys will be conducted: a. For activities that will not result in ground disturbance and for vegetation removal activities that will take less than 1 day, a qualified biologist will conduct a single pre-activity survey prior to the start of work on the first day that work occurs. b. For maintenance activities that involve ground disturbance and vegetation removal activities that will take more than one day, the qualified biologist shall conduct a pre-activity survey on each morning of and prior to the scheduled work commencing. If no CRLF or CTS are found during the pre-activity surveys, the work may proceed. If CRLF or CTS of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. <u>Pre-Activity Survey (for VHP-Covered Activities)</u> This survey is not required by the VHP but may be implemented by Valley Water on a voluntary basis. 1. A qualified biologist will conduct a single daytime survey within a seven-day period preceding the onset of maintenance activities. If the qualified biologist deems it appropriate based on their professional judgement, a night survey for CRLF and/or CTS may also be conducted within a seven-day period preceding the onset of maintenance activities. If no CRLF or CTS are found during the pre-activity survey, the work may proceed. If CTS of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. <u>Protection of Individuals (All Activities)</u> These protection measures are not required under the VHP but may be implemented by Valley Water on a voluntary basis for VHP-covered projects. These measures are required for projects that are not covered under the VHP. If CRLF or CTS eggs or larvae are found, a buffer will be established by a qualified biologist around the location of the eggs/larvae and work may proceed outside of the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed, and species has moved out of the area. If CRLF or CTS adults or non-larval juveniles are found, one of the following two procedures will be implemented: 1. 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

BMP Number	BMP Title	BMP Description
		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 approval for the CRLF or both USFWS and CDFW approval for the CTS), and work may proceed. 2. 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. Work within the buffer zone will be rescheduled. During animal conflict management activities, if CRLF or CTS 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 the subterranean networks of the occupied burrow or produce substrate vibrations that 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 CRLF or CTS 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 impact area, with USFWS approval for the CRLF or USFWS and CDFW approval for the CTS. A biologist will observe the relocated animal until it is certain that the animal is not in immediate danger of desiccation or predation. <u>Site-Specific Species Protection (for Activities Not Covered Under the VHP)</u> For Sediment Removal and Bank Stabilization Projects that are not covered under the VHP, if CRLF or CTS of any life stage are found, the qualified biologist, in cooperation with the project proponent, shall complete a site-specific plan to protect individuals for the project. Elements of the plan may 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 individuals, methods of documentation, and reporting of results.
BMP GEN-13	Protection of Foothill Yellow-Legged Frogs	A qualified biologist will conduct a desk audit to determine whether suitable habitat for foothill yellow-legged frogs (FYLF) is present in or adjacent to a maintenance activity based on all available information, including the habitats modeled in the VHP. If the qualified biologist determines that this species is likely to be encountered within the work area, the pre-activity surveys described below will be performed. Pre-Activity Surveys (for Activities Not Covered Under the VHP) 1. A qualified biologist will conduct a single daytime survey within a seven-day period preceding the onset of maintenance activities.

BMP Number	BMP Title	BMP Description
		2. If an individual FYLF is observed within the work area during the daytime pre-activity survey, the following additional surveys are required: a. For activities that will not result in ground disturbance and for vegetation removal activities that will take less than one day, a qualified biologist will conduct a single pre-activity survey prior to the start of work on the first day that work occurs. b. For maintenance activities that involve ground disturbance, and vegetation removal activities that will take more than 1 day, the qualified biologist shall conduct a pre-activity survey on each morning of and prior to the scheduled work commencing. If no FYLF are found during the pre-activity surveys, the work may proceed. If FYLF of any life stage are detected during the surveys and/or during the course of maintenance activities, the qualified biologist may elect to implement additional pre-activity surveys prior to start of work as described and may implement the measures listed under *Protection of Individuals* below. Pre-Activity Survey (for VHP-Covered Activities) This survey is not required under the VHP but may be implemented by Valley Water on a voluntary basis. 1. A qualified biologist will conduct a single daytime survey within a 7-day period preceding the onset of maintenance activities. If no FYLF are found during the pre-activity surveys, the work may proceed. If FYLF of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. <u>Protection of Individuals (All Activities)</u> These protection measures are not required under the VHP but may be implemented by Valley Water on a voluntary basis for VHP-covered projects. These measures are required for projects that are not covered under the VHP. If FYLF eggs or larvae are found, a buffer will be established by a qualified biologist around the location of the eggs/larvae and work may proceed outside of the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed, and species has moved out of the area. If FYLF adults or non-larval juveniles are found, one of the following two procedures will be implemented: 1. 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

BMP Number	BMP Title	BMP Description
		survey), the individual will be captured and relocated by a qualified biologist (with CDFW approval), and work may proceed. 2. 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. Work within the buffer zone will be rescheduled. Site-Specific Species Protection (for Activities Not Covered Under the VHP) For Sediment Removal and Bank Stabilization Projects not covered under the VHP, if FYLF of any life stage are found, the qualified biologist in cooperation with the project proponent shall complete a site-specific plan to protect individuals for the project. Elements of the plan may 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 individuals, methods of documentation, and reporting of results.
BMP GEN-14	Protection of Northwestern Pond Turtles	A qualified biologist will conduct a desk audit to determine whether suitable habitat for northwestern pond turtles (NWPT) is present in or adjacent to a maintenance activity based on all available information, including the habitats modeled in the VHP. If the qualified biologist determines that this species is likely to be encountered within the work area, the pre-activity surveys described below will be performed. Pre-Activity Surveys (for Activities Not Covered Under the VHP) 1. A qualified biologist will conduct a single daytime survey within a 7-day period preceding the onset of maintenance activities for NWPT and nests of this species. 2. If an individual NWPT is observed within the work area during the daytime pre-activity survey, the following additional surveys are required: a. For activities that will not result in ground disturbance and for vegetation removal activities that will take less than 1 day, a qualified biologist will conduct a single pre-activity survey prior to the start of work on the first day that work occurs. b. For maintenance activities that involve ground disturbance and vegetation removal activities that will take more than 1 day, the qualified biologist shall conduct a pre-activity survey on each morning of and prior to the scheduled work commencing. If no NWPT are found during the pre-activity surveys, the work may proceed. If NWPT of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. Pre-Activity Survey (for VHP-Covered Activities) This survey is not required under the VHP but may be implemented by Valley Water on a voluntary basis.

BMP Number	BMP Title	BMP Description
		1. A qualified biologist will conduct a single daytime survey within a seven-day period preceding the onset of maintenance activities for NWPT and nests of this species. If no NWPT are found during the pre-activity surveys, the work may proceed. If NWPT of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. Protection of Individuals (All Activities) These protection measures are not required under the VHP but may be implemented by Valley Water on a voluntary basis for VHP-covered projects. These measures are required for projects that are not covered under the VHP. If an active NWPT nest is detected within the activity area, a 50-foot buffer zone will be established and maintained around the nest during the breeding and nesting seasons (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. If NWPT adults or juveniles are found, one of the following two procedures will be implemented: 1. 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 CDFW approval), and work may proceed. The individual will be relocated to a suitable site within the same watershed and within 500 meters of its original location unless it is first tested and determined to be free of shell-wasting disease. 2. 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. A qualified biologist or biological monitor will monitor the individual(s) and modify the buffer if needed. Work within the buffer zone will be rescheduled. Site-Specific Species Protection (for Activities Not Covered Under the VHP) For Sediment Removal and Bank Stabilization Projects, if NWPT of any life stage are found, the qualified biologist in cooperation with the project proponent shall complete a site-specific plan to protect individuals for the project. Elements of the plan may 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 individuals, methods of documentation, and reporting of results.

BMP Number	BMP Title	BMP Description
BMP GEN-15	Prevention of Spread or Mobilization of Pathogens and Invasive Plants	To minimize the potential for introduction or spread of amphibian and NWPT pathogens, the following measures (or other similar measures) will be implemented during qualified biologists' work in aquatic habitats potentially supporting special-status amphibians and/or NWPT: • Sampling and field gear will be disinfected after exiting one aquatic habitat and before entering the next aquatic habitat, unless the waters are hydrologically connected to one another. • All organic matter will be removed from nets, traps, boots, vehicle tires, and all other surfaces that have come into contact with water or potentially contaminated sediments. These items will then be rinsed with clean water before entering the next aquatic habitat, unless the waters are hydrologically connected to one another. • Boots, nets, traps, hands, etc., will be scrubbed with a bleach solution (0.5 to 1.0 cup per 1.0 gallon of water), Quat-128™ (1:60), or a 3 to 6 percent sodium hypochlorite solution and thoroughly rinsed clean with water between study sites. Equipment will be rinsed clean with water between study sites. Cleaning equipment in the immediate vicinity of aquatic habitats will be avoided (e.g., clean in an area at least 100 feet from aquatic features). Care will be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat. If the waters are hydrologically connected to one another, disinfecting equipment does not need to occur between habitats. • When working at sites with known or suspected disease problems, disposable gloves will be worn and changed between handling each animal. Gloves will be wetted with water from the site or distilled water prior to handling any amphibians. Gloves will be removed by turning inside out with hands cleaned using a hand cleaner and water rinse to minimize cross-contamination. • If an individual of any amphibian species, or a NWPT, is found and appears to be infected by a pathogen, it will not be moved off-site. Rather, the USFWS and CDFW will be contacted for guidance on the disposition of the individual. • If amphibians or NWPT need to be relocated to avoid injury or mortality of individuals, they will be relocated the minimum distance necessary to move them to suitable habitat outside the maintenance area. Relocations will follow processes described in species-specific BMPs. NWPT will be relocated only within the same watershed and within 500 meters of their original location, unless they are first tested and determined to be free of shell-wasting disease. To minimize the potential for introduction and spread of *Phytophthora* during revegetation work: • Container stock used at revegetation sites will be sourced from nurseries in compliance with the *Guidelines to Minimize Phytophthora Pathogens in Restoration Nurseries* (Working Group for Phytophthoras in Native Habitats, 2016) whenever feasible. Valley Water may adopt newer guidelines as they become available.

BMP Number	BMP Title	BMP Description
		To minimize the potential for introduction or spread of *Phytophthora* and invasive plants to sensitive plant communities, the following measures (or other similar measures) will be implemented for any SMP activities immediately adjacent to (especially upslope from) serpentine plant communities: • Before arrival at the site, equipment, vehicles, and tools will be free of soil, including debris on tires, wheel wells, vehicle undercarriages, and other surfaces. A high-pressure washer and/or compressed air may be used (at an off-site location) to ensure that soil and debris are completely removed. Vehicles that travel and park only on paved public roads and that do not carry mud, soil, gravel, or plant material from off-site locations do not require external cleaning. The interior of vehicles and equipment (e.g., cabs) must be free of mud, soil, gravel, and other debris (e.g., vacuumed, swept, or washed). • Prior to arrival at the site, small tools and equipment must be washed to be free of soil or other contamination, and they must be sanitized. Wood handles on tools should be sealed with a waterproof coating to make them easier to sanitize. Before sanitizing, all soil and organic material (roots, sap, etc.) will be removed from the surface. If necessary, a detergent solution and brush will be used to scrub off surface contaminants. A sanitizing agent may also be used as a cleaning fluid. Screwdrivers or similar implements may be needed to clean soil out of crevices or shoe treads. Brushes and other implements used to help remove soil will be cleaned and sanitized after use. • Sanitization procedures will occur after surface soil and debris are removed. Surfaces will be treated with a sanitizing agent, allowing the appropriate contact time before use or rinsing. If surfaces are clean and dry, they will be thoroughly wetted and allowed to rest for the appropriate contact time. If the sanitizer has been used to help clean the surface, fresh sanitizer should be used to rinse off any dirty solution, and again, the equipment should be allowed to rest for the required contact time. If treated surfaces are wetted with water, the sanitizing solution may become diluted; enough sanitizer should be applied to completely displace the water film. Sanitizing agents may be applied by using spray bottles and thoroughly wetting the surface. All appropriate safety precautions will be observed to prevent contact with eyes or skin when using these agents. • Sanitizing agents may include 70 to 90 percent ethyl or isopropyl alcohol (sprayed to thoroughly wet the surface and allowed to air dry before use); freshly diluted bleach solution (0.525 percent sodium hypochlorite) for a minimum of 1 minute (due to corrosivity, not advised for steel or other materials damaged by bleach); or 2,000 parts per million (ppm) quaternary ammonium disinfectant for 1 minute (or according to manufacturer recommendations for use against *Phytophthora*), freshly made to ensure target concentrations. • Footwear must be free of debris and soil before arriving at the site and should be cleaned and disinfected before starting work each day. At the start of work at each new job site, workers' clothes

BMP Number	BMP Title	BMP Description
		should be free of all mud, soil, or plant debris. If clothes are not freshly laundered, remove all debris and adhered soil with a stiff brush. • Soil and plant debris will be cleaned from equipment and hand tools, buckets, and gloves. • To the degree feasible, work activities in or immediately adjacent to (especially upslope from) serpentine communities should be scheduled to avoid rainy periods or times when soil is very wet and more likely to contaminate equipment. • Materials used for erosion control will be clean, new, sanitized, or otherwise have a low risk of *Phytophthora* contamination. Erosion control methods will be implemented in a manner that directs surface water flow away from sensitive plant species and communities. • Mulch, compost, soil amendments, and other revegetation materials must be determined to be low-risk for *Phytophthora* introduction, if used. Irrigation system components (e.g., pipe, fittings, valves, driplines, and emitters), erosion control fabric, fencing, stakes, posts, and other planting site materials must be new or sanitized.
GEN-16	Protection of Bats and Bat Colonies	1. A qualified biologist will conduct a desk audit to determine whether suitable habitat (appropriate roost trees or anthropogenic structures) is present for bats and/or bat colonies within 100 feet of the work site, staging areas, or access routes. 2. If potential bat and/or bat colony habitat is determined to be present, a qualified biologist will conduct a survey within two weeks prior to the onset of work activities to look for evidence of 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 and/or bat colony is found in a tree or structure that must be removed or physically disturbed, the qualified biologist will consult with the CDFW prior to initiating any removal or exclusion activities.
GEN-17	Protection of San Francisco Dusky-footed Woodrat	Prior to work within riparian, oak woodland, or coyote brush scrub habitats or the removal of any oak trees outside these habitats, a qualified biologist will conduct a desk audit to determine whether woodrats are known to be present within or adjacent to the work location or if a suitable habitat is present. 1. If the biologist determines that woodrats are known to be present at the work location or suitable habitat is present and the presence/absence of woodrats is unknown AND the maintenance activity would result in the disturbance of suitable habitat or woodrat nests (if present), a pre-activity survey for this species will be performed.

BMP Number	BMP Title	BMP Description
		2. If no woodrat habitat is present, or if there is habitat present but it will not be affected by the maintenance activity, then no further action is required. Pre-Activity Survey If required, a qualified biologist shall conduct a pre-activity survey within 2 weeks prior to the start of maintenance activities to determine if woodrat nests are present within the immediate activity area or a surrounding 5-foot buffer. If no woodrat nests are found during the pre-activity survey, the work may proceed. If woodrat nests are detected during the survey and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. <u>Protection of Individuals</u> If woodrat nests are determined to be present, the following measures will be implemented: 1. To the extent feasible, impacts on woodrat nests will be avoided by maintaining a minimum 5-foot buffer between maintenance activities and nests. Even if a 5-foot buffer cannot be maintained, Valley Water will minimize impacts to nests by avoiding the direct destruction or modification of the nests to the extent feasible. 2. 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. CDFW will be notified before any relocation activities and relocations will follow the plan described below. a. 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. b. 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 on which the woodrats can add nest material. Alternatively, a suitable artificial nest box may be used. c. Subsequently, during the evening hours (i.e., within two 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; relocation efforts will then proceed a minimum of two weeks later (following a

BMP Number	BMP Title	BMP Description
		survey by a qualified biologist that determines that dependent young are no longer present), or CDFW will be contacted for guidance on how to proceed.
GEN-18	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 following: 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 including the targeted salvage of Pacific lamprey ammocetes following methods outlined in the Lamprey Technical Workgroup (2020) Appendix C, shall be captured in the work area and transferred to another reach as determined by a qualified biologist. 2. Timing of work in streams that support a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. 3. 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. 4. Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work. Streams that support a sensitive species (i.e., steelhead, Pacific lamprey) will require a relocation effort and/ or initial onsite monitoring by a qualified biologist, depending on seasonal conditions.
GEN-19	Avoidance of Impacts on the San Joaquin Kit Fox	A qualified biologist will conduct a desk audit to determine whether a maintenance activity will occur in an area where the San Joaquin kit fox could potentially occur (based on VHP habitat mapping and CNDDB records) and in potential habitat for the species. If the biologist determines that the maintenance activity could occur in an area where San Joaquin kit foxes are potentially present, a pre-activity survey for this species will be performed as described below. <u>Pre-Activity Surveys</u> If the biologist determines that an SMP activity could occur in an area that could potentially support a kit fox, Valley Water 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 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, evaluate their use by kit fox, and, if possible, assess the potential impacts on the kit fox of the proposed activity. The status of all dens shall be determined and mapped in accordance with the survey protocol.

BMP Number	BMP Title	BMP Description
		b) If a natal/pupping den is discovered within the project area or within 200 feet of the project boundary, the USFWS and CDFW shall be immediately notified. Disturbance or destruction to all San Joaquin kit fox dens should be avoided. Destruction or disturbance of any known or natal/pupping kit fox den would require authorization from the USFWS and CDFW. 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: USFWS and CDFW must be contacted (occupied and unoccupied) ▪ Atypical den: 50 feet If take of the San Joaquin kit fox will occur, take authorization from the USFWS and CDFW will be necessary.
GEN-20	Hazard Tree Removal	The following requirements apply to hazard tree removal activities occurring under the SMP: • No soil disturbance, aside from superficial disturbance of the ground surface (such as when a tree is dragged), will occur during hazard tree remediation activities. • If tree removal activities not covered under the VHP result in the removal of more than five adjacent trees, each 12-inch diameter at breast height or larger, or a stand of trees with a canopy area equal to or larger than 2,000 square feet, Valley Water will revegetate the affected area with some native woody vegetation components. These native trees and/or shrubs will be selected by a qualified biologist and/or vegetation management professional to determine suitability for the local site and will be planted to best encourage re-establishment of native woody riparian vegetation in the larger canopy gap. • No tree known to have been occupied (based on CNDDB records, other available information, or a pre-activity survey) by an active Swainson's hawk, bald eagle, or golden eagle nest within the prior five years would be removed under the Program.

BMP Number	BMP Title	BMP Description
		General Maintenance Practices
GEN-21	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-22	Employee/Contractor Training	All appropriate Valley Water staff and contractors will receive annual training on SMP BMPs. The training will also include an overview of special-status species identification and habitat requirements. Valley Water staff and contractors will receive fact sheets to assist with in-the-field identification of special-status species and their habitats. For Valley Water staff and contractors who may be working in streams which are habitat for sensitive salmonid species, this training will include a salmonid education awareness training which will emphasize methods to cross a stream and work in water that avoid or minimize impacts to water quality and salmonid habitat. These methods are presented in a salmonid BMP pamphlet distributed to all field crews at the time of the annual training. This pamphlet includes a list of steelhead creeks in the county, a diagram of the best areas to cross creek channels, and methods to avoid or minimize impacts to salmonid habitat.
GEN-23	Paperwork Required On Site	1. Copies of regulatory permits related to the SMP will be kept on-site and available for review, if requested by regulatory personnel. All Valley Water staff will be familiar with the requirements outlined in the SMP permits. 2. Copies of the SMP Manual and this BMP Manual will be kept on-site.
GEN-24	Work Site Housekeeping	1. Valley Water 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 BMP GEN-25). 4. Valley Water'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, and cigarettes) will be collected at the site daily and disposed of at an appropriate disposal site.
GEN-25	Erosion and Sediment Control Measures	1. Erosion control measures will be implemented so that the site is stabilized and water quality is protected prior to significant rainfall. The channel bed and areas below the Ordinary High-Water Mark (OHWM) are exempt from this BMP.

BMP Number	BMP Title	BMP Description
		2. Erosion control fabrics will consist of natural fibers where feasible; 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 and following the California Stormwater Quality Association (CASQA) Construction Stormwater Best Management Practice Handbook guidelines. 4. Erosion control measures may include, but are not limited to silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization (i.e., tackified straw with seed, jute or geotextile blankets, etc.), wood chips, and straw mulch. Geotextile fabric will only be used when biodegradable materials (e.g., straw matting, erosion control blankets) are determined to be ineffective or infeasible. 5. Where necessary to minimize soil from being tracked onto streets near work sites, construction entrances and exits will be stabilized. 6. All temporary construction-related erosion control methods will be removed at the completion of the project. 7. At no time will oily, greasy, or sediment-laden runoff be allowed to enter or be placed where it may later enter any waterway. Any active non-stormwater discharge will cease immediately. Corrective actions will be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. If more than 10 business days are required for compliance, a rationale will be recorded. 8. All necessary and adequate precautions will be taken to prevent the project from increasing the turbidity of any watercourse flowing past the construction site. Where natural turbidity is between 0 and 50 NTU, waters will be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Where natural turbidity is greater than 50 NTU, increases will not exceed 10 percent. 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 work area. Active non-stormwater discharges and visual increases in turbidity must be immediately reported to Valley Water's SMP Implementation Project Manager. 9. 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. Modifications, repairs, and improvements to erosion control measures will be made as needed to protect water quality.

BMP Number	BMP Title	BMP Description
		10. Starting September 1, 72-hour weather forecasts will be monitored daily, and sites must be maintained so that they can be rapidly winterized. Winterization is the process of maintaining work sites and preparing them for rainfall with the appropriate BMPs to prevent erosion and sediment transport and protect water quality. Winterization occurs upon completion of work activities or, on incomplete projects, prior to the occurrence of forecasted rainfall of at least 25% chance of 0.10 inch in 24 hours.
GEN-26	Staging and Stockpiling of Materials	1. To protect on-site vegetation and water quality, staging areas will be located on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation and be located outside of sensitive habitats. 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 waterbodies or storm drains. 3. 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. Any odorous materials will not be stockpiled longer than seven calendar days on site. 4. Runoff from the staging areas will not be allowed to enter waterways, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens). 5. The discharge of decant water into waterways from any on-site temporary sediment stockpile or storage area is prohibited. 6. 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. 7. During the wet season (generally October 1 through April 30), no stockpiled soils or other materials will remain exposed, unless surrounded by properly installed and maintained (i.e., per manufacturer specifications) silt fencing or other means of erosion control that prevents runoff from the stockpile into waters of the state. During the dry season, exposed, dry stockpiles will be watered, enclosed, covered (BMP GEN-25). 8. All pipes, culverts, or similar structures stored at a site within sensitive species areas, for one or more overnight periods will 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 Valley Water biologist will be consulted on what steps should be taken to protect the species. If a Valley Water 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-27	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 will be blocked with wattles, hay bales, or other appropriate filtration material. Excess water may be drained from the truck by slightly tilting the loads and allowing the water to drain out through the applied filter. However, this may only occur where the sediment is being loaded into the trucks within the active project area in the creek or within an identified vegetated area (swale) that is separated from the creek.
GEN-28	Stream Access	Valley Water 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-29	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 as hazardous materials and hazardous waste in accordance with city, state, and federal regulations. Any hazardous waste will be properly recycled or disposed of off-site. 3. Hazardous materials and wastes will be stored in watertight containers and stored in appropriate secondary containment that is capable of containing 110% of the primary container(s). Generators and other equipment with the potential to leak or spill fuels and lubricants will be stored or operated with secondary containment. Rainwater in secondary containment that may have mixed with hazardous waste will be properly disposed of. 4. Hazardous materials and waste will be stored away from waterways to avoid a direct connection to the storm drainage system or surface water. 5. Hazardous materials and waste will be covered when not in use and at the end of every workday, during wet weather, or when rain is forecasted.

BMP Number	BMP Title	BMP Description
		6. 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. 7. Sanitation facilities will be regularly cleaned and/or replaced and inspected daily for leaks and spills.
GEN-30	Existing Hazardous Materials	If hazardous materials, such as oil, batteries, or paint cans, are encountered at the maintenance sites, Valley Water will carefully remove and dispose of these materials according to applicable regulatory requirements. Valley Water staff will wear proper protective gear and store the waste in appropriate hazardous waste containers until it can be disposed of at a hazardous waste facility.
GEN-31	Paving and Asphalt Work	1. Avoid paving and seal coating in wet weather or when rain is in the forecast, to prevent materials that have not cured from contacting stormwater runoff. 2. Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal or fog seal; and when saw cutting asphalt or concrete. 3. Collect and recycle, or as appropriate, dispose of excess abrasive gravel or sand. Do not sweep this material into gutters. 4. Do not use water to wash down fresh asphalt concrete pavement. 5. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system. 6. Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as work is complete in one location or at the end of the workday. 7. If sawcut slurry enters a catch basin, clean it up immediately.
GEN-32	Painting and Paint Removal	1. Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream. 2. For water-based paints, paint out brushes to the extent possible and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain. 3. For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste. 4. Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash. 5. Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead-based paint removal requires a state-certified contractor.

BMP Number	BMP Title	BMP Description
GEN-33	Spill Prevention and Response	Valley Water will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels, storm drains, or on the ground following these measures: 1. Valley Water field personnel will be appropriately trained in spill prevention, hazardous material control, and cleanup 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. Valley Water staff or contractors will routinely inspect the work site to verify that spill prevention and response measures are properly implemented and maintained. 6. Surfaces where fluids have spilled will not be hosed down. Dry cleanup methods (absorbent materials, cat litter, and/or rags) will be used. 7. Spilled dry materials will be swept up immediately. The contractor will not try to wash them away with water or bury them. If water must be used, the contractor will collect the water and spilled fluids and dispose of them as hazardous waste. 8. Spills on dirt areas will be cleaned up by digging up and properly disposing of contaminated materials. 9. Small spills (less than 18 inches in diameter), including small quantities of oil, gasoline, paint, or other materials, should be controlled by the first responder (maintenance staff) and do not necessarily require an emergency response team. Medium spills (greater than 18 inches but less than 6 feet in diameter) are generally controlled by the first responder (maintenance staff), but police or fire department HAZMAT teams may be called based on conditions. If a hazardous materials spill occurs that cannot be contained or cleaned up with the onsite materials or the spill is significant (larger than 6 feet in diameter or is a "running" spill), the onsite Valley Water field personnel will be responsible for immediately initiating an emergency response sequence by notifying the proper authorities (i.e., Valley Water 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; and deferring all other response activities to public emergency response agencies and/or the Valley Water ER Team or Valley Water ER Contractor. Depending on the nature of the release, the Valley Water ER Team's actions will include urgent (responding within two hours of notification) field response site reconnaissance, emergency sequence initiation, defensive containment, release control, incident command, or priority (non-two-hour) field response site reconnaissance and clean-up operations.

BMP Number	BMP Title	BMP Description
		All significant releases of hazardous materials, including oil, are required by law to be reported. If a "reportable[10]" spill of petroleum products occurs, Valley Water's SMP Program Manager will be notified, and the appropriate safety and cleanup crews will be contacted. A written description of the reportable release is required to 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.
GEN-34	Existing Hazardous Sites	Upon selection of maintenance project locations, Valley Water 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 Valley Water'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, Valley Water will contact the RWQCB case manager listed in the database. Valley Water will work with the case manager to ensure maintenance activities do not affect cleanup or monitoring activities or threaten the public or environment.
GEN-35	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. Have appropriate fire suppression equipment available at the work site. b. Keep flammable materials, including flammable vegetation slash, at least 10 feet away from any equipment that could produce a spark, fire, or flame. 3. Do not use portable tools powered by gasoline-fueled internal combustion engines within 25 feet of any flammable materials unless a round-point shovel or fire extinguisher is within immediate reach of the work crew (no more than 25 feet away from the work area).
GEN-36	Dust Management	Valley Water will implement the Bay Area Air District Basic Dust Control Measures. Current measures stipulated by the Bay Area Air District Guidelines include the following: 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site will be covered.

[10]A reportable spill is defined 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.

BMP Number	BMP Title	BMP Description
		3. All visible mud or dirt track-out onto adjacent public roads will be removed using wet-power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads will be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading, unless seeding or soil binders are used. 6. Idling times will be minimized either by shutting equipment off when not in use or by 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 will be provided for construction workers at all access points. 7. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be in proper condition prior to operation. 8. Post a publicly visible sign with the telephone number and person to contact at Valley Water regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District's phone number will also be visible to ensure compliance with applicable regulations.
GEN-37	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 where feasible. For activities such as sediment removal where equipment must be operated from the stream, dewatering will be conducted as necessary, following the protocols in BMPs GEN-40 or GEN-41. 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, which 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. The designated area will be clearly marked 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.

BMP Number	BMP Title	BMP Description
GEN-38	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 creek channels or 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 waterbodies or to areas outside of the active project site is prohibited. Additional vehicle/equipment washing will occur at the approved wash area in Valley Water's corporation yard.
GEN-39	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. A designated area will be designated for equipment fueling away from any slopes, watercourses, or drainage facilities. When possible, fueling will occur 100 feet away from any waterbody. 4. 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. Other impenetrable barriers may be used such as an earthen berm with a layer of Visqueen to prevent fluids from running off or through the staging area to waters of the U.S./state.
		Dewatering Measures
GEN-40	Diversion and/or Dewatering for Non-Tidal Sites	If water is present within the channel during the maintenance work period and work requires that equipment be used in the channel below the OHWM, the streamflow will be diverted around the work area by installing a temporary dam and/or bypass. Where appropriate, stream flow diversions will occur via gravity-driven systems. To avoid and minimize impacts to water quality and aquatic wildlife, the following measures will be implemented: 1. For construction and monitoring of a stream flow bypass, VW's *Sediment Removal and Bank Stabilization Projects* checklist will be completed. 2. Recommendations by a qualified biologist to protect native fisheries and aquatic vertebrates will be incorporated into the bypass design which may include: a. Screening the stream flow diversion source or pump;

BMP Number	BMP Title	BMP Description
		b. Relocation of native aquatic vertebrates, including targeted salvage of Pacific lamprey ammocetes following methods outlined in the Lamprey Technical Working Group (2020) Appendix C c. Where sediment removal activities occur, ensure that a berm is left between the work area and stream flows during excavation activities and that the berm between the work and the channel is wide enough to prevent introduction of turbid water from the cell into the channel; and d. Measures to ensure the diversion system will not result in negative effects to downstream flows (e.g. erosion) during or following diversion system implementation and dismantling. Construction: 1. The construction of diversion and dewatering facilities will be based on the water bypass plan. 2. Cofferdams will be installed both upstream and downstream of the work area to minimize impacts. 3. In streams where water may enter the maintenance site from downstream (reverse flow), additional cofferdams on the downstream end may be necessary. When multiple cofferdams are constructed, the upstream dam will be constructed first. 4. Instream cofferdams will only consist of sandbags[11], earthen fill, clean gravel, or rubber bladders. 5. Plastic sheeting will be placed over k-rails, timbers, and earthen fill to minimize water seepage into and out of the maintenance areas. The plastic sheets will be firmly anchored, using sandbags or gravel bags, 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. 7. If necessary to prevent erosion, an energy dissipator will be constructed at the discharge point. 8. Timing of flow diversions will be coordinated with the completion of the dam structure to avoid drying up the downstream creek area. 9. For diversion systems implemented on creek reaches supporting sensitive fish species: a. A qualified biologist must be on site during the construction and dismantling of a diversion system on a sensitive fish creek reach; and

[11] Clean gravel bags are preferred, but sandbags may be utilized if approved as part of the diversion and dewatering plan.

BMP Number	BMP Title	BMP Description
		b. Any proposed changes to the diversion plan must be approved by a qualified biologist before changes are implemented. Implementation: 1. Water flows downstream of the work site will be maintained to prevent stranding aquatic vertebrates, and implementation of channel dewatering in addition to relocation plans submitted to the appropriate agencies. a. Native aquatic vertebrates will be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that support 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. 2. Water diverted around work sites and water detained by cofferdams will be protected from maintenance activity-related pollutants, such as soils, equipment lubricants, or fuels. 3. Filtration devices (silt bags attached to the ends 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, Valley Water's SMP Implementation Project Manager will be alerted. 4. 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 that of receiving water. Deconstruction: 1. When maintenance is completed, the flow diversion structure will be removed as soon as possible with a qualified biologist or biological monitor on site. Impounded water will be released at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat. 2. Removal of flow diversion will begin at the downstream end.

BMP Number	BMP Title	BMP Description
		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 riparian vegetation.
GEN-41	Diversion and/or Dewatering in Tidal Work Areas	1. For tidal areas, a downstream cofferdam will be constructed to prevent the work area from being inundated by tidal flows. 2. Cofferdams and fish exclusion measures will be installed at low tide when the channel and project site are at their driest. 3. If possible, bypass pipes will not be used when work is being conducted on one side of the channel if flows can continue on the other side of the creek channel without entering the project area. 4. If downstream flows cannot be diverted around the work 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 above the background levels of the tidal waters into which they are discharged. Energy dissipators may be installed at the discharge point to prevent erosion. 5. If upstream flows are present, the entire streamflow will be diverted around the work area. This may occur in work areas straddling non-tidal and tidal reaches. In muted tidal reaches (e.g., systems with a downstream tide gate), timing of flow diversions will be coordinated with the tide gate to maintain water within the downstream creek area and to minimize dry back conditions during low tide. 6. Cofferdams in tidal areas will consist of earthen or gravel material. If earthen material 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 protective covering or sheeting will be placed on the water side of an earthen coffer dam to protect water quality. 7. When maintenance is complete, 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. 8. A qualified biologist will be on site during the construction and dismantling of a dewatering system.
GEN-42	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:

BMP Number	BMP Title	BMP Description
		1. Pumps and generators will be maintained according to manufacturers' specifications to regulate flows to prevent dryback or washout conditions. 2. Generators will be stored or operated with secondary containment. 3. Pumps will be operated and monitored to prevent low water conditions, which could pump muddy bottom water, or high-water conditions, which create ponding. 4. All pump intakes will be screened to prevent entrainment of native fish or amphibian species. The screening dimensions will be appropriate to the species present. Pumps in steelhead creeks will be screened according to NMFS criteria (http://www.swr.noaa.gov/sr/fishscrn.pdf) to prevent entrainment of steelhead. 5. A qualified biologist will be on site during the construction and dismantling of a dewatering system.
Public Safety Measures		
GEN-43	Public Outreach	The public will be informed of upcoming maintenance work prior to the start of work as part of the NPW: 1. Neighborhood Work Notices will be distributed as part of the NPW preparation prior to the start of work. 2. Local governments (cities and County) will be notified of scheduled maintenance work. The NPW will be submitted to the public works departments~~,~~ and local fire districts~~, and Valley Water's Flood Protection and Watershed Advisory Committees.~~ 3. Valley Water will post specific information on individual maintenance projects on the SMP website: (https://www.valleywater.org/project-updates/stream-maintenance-program) 4. For high profile projects, at Valley Water'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-44	Implement Public Safety Measures	Valley Water 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, as appropriate, in public-access 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 are temporarily closed. 3. If temporary lane closures are required to allow trucks to pull into and out of access points to the work site, advance signage will be posted. 4. Temporary fencing, either the orange safety type or chain link, will be installed above repair sites on bank stabilization projects.

BMP Number	BMP Title	BMP Description
		5. When necessary, Valley Water or contracted staff will provide traffic control and site security.
GEN-45	Minimize Noise Disturbances to Residential Areas	Valley Water will implement maintenance practices that minimize disturbances to residential areas surrounding work sites: 1. With the exception of emergencies, work will generally be conducted during normal working hours (6:30 a.m. to 4:00 p.m.) on weekdays. Vegetation maintenance activities that do not involve heavy equipment may begin at 6:00 a.m. Valley Water may adjust work hours to comply with local noise ordinances. Maintenance activities in residential areas will not occur on Saturdays, Sundays, or Valley Water 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.
GEN-46	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 a.m. – 10:00 a.m. and 3:00 p.m. – 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 facilities closures will be scheduled outside of peak traffic hours (7:00 a.m.– 10:00 a.m. and 3:00 p.m. – 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 during the maintenance period. 5. Access to driveways and private roads will be maintained. If brief periods of maintenance would temporarily block access, property owners would be notified prior to maintenance activities.
Cultural Resource Measures		
GEN-47	Minimize Impacts to Inadvertently Discovered Cultural Resources	Work in areas where cultural resources are identified will be restricted or stopped until proper protocols are met.

BMP Number	BMP Title	BMP Description
		1. Work at the location of the find will halt immediately within 100 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 100 feet in all directions from the find. 2. VW shall retain the services of an archaeologist, meeting the U.S. Secretary of the Interior's qualifications in archaeology (Federal Register Vol. 48, No. 190, 1983), who shall visit the discovery site as soon as practicable, and perform minor hand excavation to describe the archaeological resource present and assess the amount of disturbance. 3. The archaeologist shall provide to VW and, if projects are in USACE jurisdiction, the USACE, at a minimum, written and digital-photographic documentation of all observed cultural materials, utilizing the guidelines for evaluating archaeological resources for the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP). Based on the assessment, VW and USACE shall identify the CEQA and Section 106 cultural resources compliance procedure to be implemented. 4. If the cultural resource appears to not meet the CRHR or NRHP criteria of significance or to be a unique archeological or tribal cultural resource and the USACE archaeologist concurs with the archaeologist's conclusions, construction shall continue while monitored by the archaeologist. The authorized maintenance work shall resume at the discovery site only after VW has retained an archaeologist to monitor and the Watershed Manager has received notification from the USACE to continue work. 5. If the find appears significant (i.e., appears to meet the CEQA definitions of an "historical resource" "unique archaeological resource", or "tribal cultural resource"), avoidance of additional impacts is the preferred alternative. The archaeologist shall determine if adverse impacts to the significant cultural resource can be avoided. 6. When avoidance is not feasible (e.g., maintenance activities cannot be deferred or they must be completed to satisfy the SMP objective), VW shall develop an Action Plan and submit it to the USACE within 48 hours of archaeologist's evaluation of the discovery. The Action Plan may be submitted via e-mail to the archaeologist. The Action Plan shall be prepared in accordance with current professional standards and State guidelines, including CEQA requirements for preparation of a data recovery plan if required, and shall describe the services of a Native American Consultant for sites containing Native American remains.
GEN-48	Discovery of Paleontological Resources	Work in areas where paleontological resources are identified will be restricted or stopped until proper protocols are met. 1. Work at the location of the find will halt immediately within 100 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 100 feet in all directions from the find.

BMP Number	BMP Title	BMP Description
		2. VW shall retain the services of a Paleontologist, meeting the Society for Vertebrate Paleontology's criteria for a "qualified professional paleontologist" (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995), who shall visit the discovery site as soon as practicable, and perform minor hand-excavation to describe the paleontological resource present and assess the amount of disturbance. 3. The paleontologist will follow the Society for Vertebrate Paleontology's guidelines for treatment of a paleontological find. 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. VW will be responsible for ensuring that the paleontologist's recommendations are implemented.
GEN-49	Discovery of Human Remains	Work in areas where human remains are identified will be restricted or stopped until proper protocols are met. 1. Work at the location of the find will halt immediately within 100 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 100 feet in all directions from the find. 2. In the event of discovery of human remains (or if 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. 3. VW shall immediately notify the Santa Clara County Coroner and provide any information that identifies the remains as Native American. If the remains are determined to be Native American, the Coroner shall contact the Native American Heritage 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 48 hours to respond and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods. 4. Preservation in situ is the preferred option. Human remains shall be preserved in situ if continuation of the maintenance work, as determined by the archaeologist and MLD, will not cause further damage to the remains. The remains and artifacts shall be documented, the find location carefully backfilled (with protective geo-fabric if desirable) and recorded in VW project files. 5. Human remains or cultural items exposed during maintenance that cannot be protected from further damage shall be exhumed by the 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-50	Review of Projects with Native Soil	1. An archaeologist will conduct a review and analysis of those project 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 analysis of the potential to disturb cultural resources will be based on an initial review of archival information from the California Historical Resources Information System/Northwest Information Center (CHRIS/NWIC). If necessary, the

BMP Number	BMP Title	BMP Description
		archaeologist will conduct additional research (including a review of the Sacred Lands Inventory of the Native American Heritage Commission) and a field inventory of the project site to determine the presence/absence of surface cultural materials associated with either pre-contact or historic-era occupation. The results, along with any mitigation and/or management recommendations, would be presented in an appropriate report and include Area of Potential Effects maps showing vertical and horizontal areas of disturbance, other necessary figures, and correspondence with interested parties. A summary table indicating appropriate management (e.g., monitoring during construction, presence/absence testing for subsurface resources, avoidance, data recovery, etc.) will be developed for each project site reviewed. The results report with be submitted to the USACE for Section 106 consultation. 2. If a cultural resource as determined by the archaeologist appears significant (i.e., appears to meet the CEQA definitions of an "historical resource" "unique archaeological resource", or "tribal cultural resource"), avoidance of additional impacts is the preferred alternative. If the resource cannot be avoided, the mitigation and/or management recommendations will be developed consistent with CEQA requirements, including requirements for a data recovery plan if required. 3. If the project location falls under the purview of a tribal monitoring agreement between Valley Water and a tribe, the archaeologist will determine whether the tribal monitoring agreement requires the presence of a tribal monitor at any of the project sites that would involve disturbance/excavation of native soil previously undisturbed by contemporary human activities. If the tribal monitoring agreement requires the presence of a tribal monitor, the archaeologist will arrange for one to be present during all ground disturbing activities.
Utilities Measures		
GEN-51	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 NPW. Utilities will be avoided as much as possible. For maintenance areas with the potential for adverse effects on utility services, the following measures will be implemented: 1. Utility excavation or encroachment permits will be required from the appropriate agencies. These permits include measures to minimize utility disruption. Valley Water and its contractors will comply with permit conditions. Such conditions will be included in construction contract specifications. 2. Utility locations will be verified through a field survey (potholing) and use of the Underground Service Alert services. 3. Detailed specifications will 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 will

BMP Number	BMP Title	BMP Description
		be notified of Valley Water's maintenance plans and schedule. Arrangements will be made with these entities regarding protection, relocation, or temporary disconnection of services. 4. Residents and businesses in the project area will be notified of planned utility service disruptions two to four days in advance, in accordance with state standards. 5. Disconnected cables and lines will be reconnected promptly.
Sediment Removal Measures		
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 will also be required. 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 to protect water quality. 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 located 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 in these areas, the channel will be graded so that the transition in 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 channels, stream gauges, outfalls, culverts, flap gates, tide gates, grade control structures, bridges, fish ladders, and fish screens shall be characterized in accordance with Valley Water's Sediment Characterization Plans for the Program Renewal (Attachment E in SMP Manual). 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 of the Manual for information on the waiver process.
Vegetation Management Measures		
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.

BMP Number	BMP Title	BMP Description
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 will be bagged and disposed of in a landfill. Arundo canes or invasive *Ludwigia* 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. If use of such equipment requires dewatering, Valley Water will submit a dewatering plan as part of the NPW process.
VEG-4	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. 3. Grazing animals will be excluded from areas where they may negatively impact sensitive biological resources as directed by the qualified biologists. 4. Grazing animals will be excluded from wetted channels, saturated soils, and wetlands. 5. Grazing will not occur within 24 hours of rain events or when soils are saturated or subject to compaction. 6. Animals will be provided access to off-stream water sources such as troughs or wells. 7. Grazing will be managed to maintain sufficient vegetative cover to prevent erosion. 8. Grazing will be implemented on a rotational basis across designated areas to allow for vegetation recovery and minimize soil compaction.
		Bank Stabilization Measures
BANK-1	Bank Stabilization Design to Prevent Erosion Downstream	To 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 that contour the repaired site to conform to adjacent areas upstream and downstream to prevent potential erosion impacts.
BANK-2	Concrete Use Near Waterways	Fresh concrete will be isolated until it no longer poses a threat to water quality, using the following appropriate measures: 1. Wet-sacked concrete and poured concrete will be excluded from the wetted channel for a period of 30 days after it is installed/poured. During that time, the concrete will be kept moist, and runoff from the concrete will not be allowed to enter a stream. Containment structures will be installed to control the placement of wet concrete and to prevent it from entering the channel outside of those structures.

BMP Number	BMP Title	BMP Description
		2. Commercial sealants (e.g., Deep Seal, Elasto-Deck Reservoir Grade) may be applied to the poured concrete surface where it may be difficult to exclude water flow for a long period of time. 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 as a location for cleaning out concrete transit vehicles. 5. Temporary concrete washout facilities will be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations. Concrete washouts may be contained in settling basins dug into the ground, raised and contained structures, trailers, etc. Concrete waste will be removed and disposed of appropriately. 6. Where slurries containing portland cement concrete or asphalt concrete are generated (such as from saw cutting, coring, or grinding), slurry wastes will not be allowed to enter storm drains or watercourses and will be removed and disposed of appropriately.
BANK-3	Bank Stabilization Post-Construction Maintenance	Valley Water may maintain or repair bank stabilization projects that are less than 2 years old and damaged by winter flows. Valley Water will notify the regulatory agencies 24 hours prior to beginning the work. The work will be reported as part of the Annual Summary Report submitted by January 31 of each year or, if necessary, the subsequent year. Appropriate BMPs will be applied during maintenance repairs.
Post Project Restoration Measures		
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). When necessary, seeding will occur in subsequent years to prevent erosion. 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 (BMP GEN-25).
REVEG-2	Planting Material	Revegetation and replacement plantings will consist of locally collected materials. Selection of species to install in revegetation sites will reference natural areas on the same creek that have a similar ecological setting and/or as appropriate for the site location.
Management of Animal Conflict Measures		
ANI-1	Surface Barrier Applications to Prevent Burrowing	Surface barrier applications installed as a method of animal conflict management, (e.g. chain-link fencing, woven geotextiles, and other similar materials) will be installed in an area no longer than 300 feet and above OHWM. This area may include either inboard or outboard sides of the levee for 300 feet, with at least 300 feet

BMP Number	BMP Title	BMP Description
		of separation from another linear installation of physical barriers on the same slope, and barriers are only installed on one side of levee slopes. Surface barrier applications will be installed in an alternating pattern, such that no inboard and outboard levee faces will have erosion control blankets along the same levee stationing.
ANI-2	Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail	No harmful fumigants (e.g., chemicals that would have a risk of secondary effects on owls) will be used under the SMP. No fumigants will be used within the range of the salt marsh harvest mouse (SMHM), California's Ridgway's rail (CRR), or California Black Rail (CBR) as identified on SMP potential range maps. Methods of rodent control within suitable habitat for these species 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 enters the trap to easily escape. All traps will be placed outside of pickleweed areas and above the high tide line.
ANI-3	Burrowing Owl Buffer Zone	In accordance with the California Department of Fish and Wildlife's (CDFW's) 2008 Guidance for Burrowing Owl Conservation, a 656-yard buffer will be established around known burrowing owl locations, within which no fumigants (including smoke bombs) will be used.
ANI-4	Animal Control in Sensitive Amphibian Habitat	No harmful fumigants (e.g., chemicals that would have a risk of secondary effects on amphibians) will be used under the SMP. Fumigants will not be used within the habitat areas of special-status amphibians. Any live traps will have openings measuring no smaller than 2 inches by 1 inch to allow California red-legged frogs, California tiger salamanders, or foothill yellow legged- frogs to safely exit.
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 will comply with 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, including beaver and gray squirrel, without first obtaining a depredation permit.
Use of Pesticides		
HM-4	Posting and Notification for Pesticide Use	Posting of areas where pesticides are used will be performed in compliance with QEMS Document Q751D02 Control and Oversight of Pesticide Use as follows: 1. Posting will be performed in compliance with the label requirements of the product being applied. 2. 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, Valley Water ensures that exposure risk is minimized further by adopting practices that go beyond the product label requirements. 3. 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.

BMP Number	BMP Title	BMP Description
		5. Right-to-know literature on the product will be made available to anyone in the area during the re-entry period. 6. A Valley Water 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, Valley Water 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 Montrose Environmental and H.T. Harvey and Associates in 2022 and 2023

Alameda
San Mateo
Santa Clara
San Mateo
Santa Cruz
Santa Cruz
Stanislaus
Santa Clara
San Benito
Inset
Inset

Aquatic Herbicide Application Areas

California Red-Legged Frog Habitat Areas Subject to the 2006 Injunction

Restrictions apply to aminopyralid + triclopyr, glyphosate, imazapyr, oryzalin, pendimethalin, triclopyr, and triclopyr-choline

Critical Habitat

Additional Areas

Bay Checkerspot Butterfly Habitat Areas Subject to the 2010 Bay Area Listed Species Injunction

Restrictions apply to oryzalin

Critical Habitat

Additional Areas

California Tiger Salamander Habitat Areas Subject to the 2010 Bay Area Listed Species Injunction

Restrictions apply to pendimethalin

Critical Habitat

Additional Areas

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Miles

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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 2-11. SMP Areas Subject to Pesticide Injunctions

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

Chapter 3
Environmental Setting and Impact Analysis

3.1 Introduction to the Environmental Setting and Impact Analysis

Sections 3.2 through 3.15 of this chapter describe the environmental resources and potential environmental impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal). Each section describes the existing environmental setting and background information for a particular resource topic to help the reader understand the conditions that could be affected by the Program Renewal. In addition, each section in Chapter 3 includes a discussion of the criteria used to determine the significance levels of the Program Renewal's environmental impacts. If appropriate, mitigation measures are identified to reduce, where possible, the adverse effects of significant impacts.

Appendix C, *General Plan Policies and Ordinances,* provides general plan policies and regulations, and public agency ordinances from Santa Clara County and jurisdictions in the Program Renewal Area that may be applicable to the Program Renewal. There are 15 municipalities that may be directly affected by the maintenance activities that would occur under the Program Renewal. Valley Water will ensure that the Program Renewal aligns with the policies, regulations, and ordinances as they apply.

This environmental impact report (EIR) has been prepared as a Subsequent EIR (SEIR). Since certification of the SMP-2 Final SEIR in 2012, substantial changes have been proposed to the Stream Maintenance Program (SMP or Program), and new information of substantial importance has developed. The Program changes, changed circumstances, and new information have the potential to involve new or worsened significant environmental effects not evaluated in the 2012 SMP-2 SEIR. Under these circumstances, CEQA (Public Resources Code Section 21666) and the CEQA Guidelines (Public Resources Code Section 15162) require that an SEIR be prepared.

3.1.1 Regional Environmental Setting and Program Renewal Area

The regional setting for the Program Renewal Area includes the Santa Clara Valley, which extends the length of the Program Renewal Area and is surrounded by the Santa Cruz Mountains to the west, the Diablo Range to the east, and the San Francisco Bay to the north.

The Program Renewal Area includes 333 miles of creeks and channels within Santa Clara County below the 1,000-foot elevation contour in both the Santa Clara Valley basin and Pajaro River watershed (see Figure 2-1 in Chapter 2, *Project Description*). Maintenance activities are generally limited to locations where Valley Water has land rights or has maintenance obligations pursuant to effective licenses and agreements. Municipalities within the Program Renewal Area that contain Valley Water owned or maintained channels include the cities of

Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and the towns of Los Altos Hills and Los Gatos. The Program Renewal Area is discussed further in Chapter 2, *Project Description* and shown in Figure 2-1.

3.1.2 Approach to Impact Analysis

When an SEIR is prepared, the environmental setting and baseline include the environmental impacts disclosed in the original EIR, and the SEIR discloses any additional impacts caused by project changes, changes in circumstances, or new information. Therefore, the project description for the Program Renewal describes activities under the 2012 SMP. In the resource sections listed below, these activities are considered as part of existing conditions, and the SEIR evaluates the incremental impact of the proposed changes to the SMP compared to existing conditions. These sections of the SEIR use the existing conditions at the time of the Notice of Preparation (NOP) as the environmental setting and baseline; the 2026-2037 impacts of the Program Renewal are then analyzed against this baseline. This approach to the SEIR baseline and impact analysis scope represents established Valley Water CEQA practice for subsequent review in the absence of unique circumstances and is consistent with CEQA case law, e.g., Fairview Neighbors v. County of Ventura (1999, 70 Cal. App. 4th 238). The resource sections that use this approach are Sections 3.3, "Air Quality"; 3.7, "Greenhouse Gas Emissions*";* and 3.12, "Transportation and Traffic."

Other resource sections in the SEIR use the existing conditions at the time of the publication of the 2022 Notice of Preparation as the environmental setting and baseline. These sections evaluate all maintenance activities of the SMP, including maintenance activities from the first and second iterations of the SMP that will continue to occur, and new activities that will be introduced in the third iteration of the SMP (Program Renewal). The baseline for evaluating the maintenance activities for the Program Renewal was established by searching publicly accessible databases, obtaining information from various published sources, field survey data, aerial images and maps, multiple versions of the *Stream Maintenance Program Manual,* and the CEQA environmental documents that have been prepared for the SMP. The resource sections that use this approach are Sections 3.2, "Aesthetics"; 3.4, "Biological Resources"; 3.5, "Cultural and Paleontological Resources"; 3.6, "Energy"; 3.8, "Hazards and Hazardous Materials"; 3.9, "Hydrology and Geomorphology"; 3.10, "Noise"; 3.11, "Public Services and Utilities"; 3.13, "Tribal Cultural Resources"; 3.14, "Water Quality"; and 3.15, "Wildfire."

Impact Terminology

This DSEIR uses the following terminology to describe the environmental effects of the Program.

- A finding of no *impact* is made when the analysis concludes that the Program would not affect the particular environmental resource or issue.
- An impact is considered *less than significant* if the analysis concludes that there would be no substantial adverse change in the environment and no mitigation is needed.
- An impact is considered *significant* if the analysis determines that a substantial adverse effect on the environment could occur. Depending on the nature of the impact and feasibility of mitigation which could be implemented, such impacts would result in one of the following two conclusions:

  - An impact is considered *less than significant with mitigation* if the analysis concludes that there would be no substantial adverse change in the environment with the inclusion of the mitigation measures described.
  - An impact is considered *significant and unavoidable* if the analysis concludes that there could be a substantial adverse effect on the environment and no feasible mitigation measures are available to reduce the impact to a less-than-significant level.

- *Mitigation* refers to specific measures or activities adopted to avoid, minimize, rectify, reduce, eliminate, or compensate for an impact.
- A *cumulative impact* can result when a change in the environment results from the incremental impact of a project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively substantial projects. The cumulative impact analysis in this DSEIR focuses on whether the Program's incremental contribution to significant cumulative impacts caused by past, present, or probable future projects is cumulatively considerable (i.e., significant).
- Because the term "significant" has a specific usage in evaluating impacts under CEQA, it is used only to describe the significance of impacts and is not used in other contexts within this document. Synonyms such as "substantial" have been used when not discussing the significance of an environmental impact.

3.1.3 Sections Eliminated from Further Analysis

The following resource topics have been eliminated from further analysis based on the nature and scope of the Program Renewal activities. A brief summary and description of these resource topics dismissed from further review is provided below.

Agriculture and Forestry Resources

The Program Renewal Area covers a large portion of Santa Clara County (see Figure 2-1), which contains a significant amount of land in agricultural uses. However, no activities under the Program Renewal would have an effect on these lands. Farmland and agricultural uses may be located near certain Program Renewal maintenance sites; however, all Program Renewal maintenance activities would take place within flood protection channels and streams maintained by Valley Water. These facilities do not contain lands designated or used for agriculture. In addition, these activities would be limited to maintenance and repair and would not result in more intensive land development. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, or lands under a Williamson Act contract would be converted under Program Renewal activities.

Similarly, the Valley Water flood protection channels that would be subjected to maintenance activities do not contain lands zoned or used for forest land or timberland. In addition, these activities would be limited to maintenance and repair and would not result in more intensive land development. No forest land or timberland would be converted under Program Renewal activities.

Geology and Soils

The Program Renewal would involve limited construction of permanent structures (e.g., culvert replacement), which could be subject to earthquake-related hazards, landslides, unstable soils, expansive soils, or other geotechnical hazards. However, Program Renewal activities would not exacerbate these hazards, and these facilities would be designed to meet appropriate professional standards and building codes to avoid such hazards; as a result, no significant impacts would result. The Program Renewal does include some activities that have a potential to lead to topsoil erosion; erosion and siltation are addressed in Section 3.14, "Water Quality." Furthermore, the Program Renewal would not involve the construction of any housing units requiring the use of septic tanks or other wastewater disposal systems.

Mineral Resources

Program Renewal activities would have no impact on the availability or use of a known, valuable or locally important mineral resource in Santa Clara County.

The Program Renewal Area includes a variety of streams and channels used for flood protection. No aggregate mining facilities are currently operating within facilities maintained by Valley Water. Although mines or mineral resource areas may be located near Program Renewal work sites, none of these activities could directly affect those mineral production sites.

Sediment excavated under the Program Renewal may be reused, with potential to offset demand for mineral resources such as aggregate. However, the total volume of dredged material created under the Program Renewal in any given year would be small (from 2014 through 2022 mean annual sediment removed was 40,281 cubic yards [Valley Water 2023]), and the amount available for reuse would be a fraction of this amount. This would not represent an appreciable fraction of the total aggregate resources used annually in the County.

Population and Housing

The Program Renewal does not involve the construction of permanent structures such as housing and employment centers, nor would it involve the creation of any new infrastructure. It only involves maintaining existing infrastructure. Thus, the Program Renewal would not induce growth either directly or indirectly. The Program Renewal would not displace substantial numbers of existing housing units or persons necessitating the construction of replacement housing elsewhere; no habitable structures exist within the stream reaches where maintenance would occur.

Land Use

Since the 2012 SEIR was certified, some general plans for cities within the SMP area have been updated. It is reasonable to assume that applicable general plan policies generally align with those summarized in Impact LU-3 of the 2012 SEIR, which provide for protection and maintenance of natural resources, protection of public health and safety, protection of regional water quality, providing flood protection practices in an environmentally sensitive manner, minimizing risk of injury and property damage caused by flooding, and more.

Based on review of the proposed changes in the Program Renewal work activities, no Program Renewal description changes would result in new or potentially more severe environmental impacts related to land use. The Program Renewal would not physically divide an established community, and Valley Water would avoid Program Renewal maintenance activity conflicts with applicable land use plans, policies and regulations discussed in Appendix C, *General Plan Policies and Ordinances*.

Recreation

No changes in the Program Renewal work activities have the potential to result in new or more severe impacts pertaining to recreational facilities. While some refinements would be made to the Program Renewal' project description, application of BMPs would help minimize temporary disruptions on recreational facilities including streamside trails. The Program Renewal would not increase the use of existing recreational facilities that would cause physical deterioration or call for new construction or expansion of recreational facilities.

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3.2 Aesthetics

3.2.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) as related to aesthetics.

Visual Character and Viewshed

Both natural and artificial landscape features make up the character of a view. The area of the landscape that is visible from a particular location (e.g., an overlook) or series of points (e.g., a road or trail) is defined as a viewshed. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include aspects of landscape settlement and development, such as roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly among viewers, depending on their level of sensitivity and interest. Among sensitive viewers, perception can vary seasonally and even hourly as weather, light, shadow, and the elements that compose the viewshed change. Form, line, color, and texture are the basic components used to describe visual character and quality for most visual assessments (U.S. Forest Service [USFS] 1974, Federal Highway Administration [FHWA] 2015). Under this system, the appearance of the viewshed is described in terms of the dominance of each of these components.

Visual Quality

Visual quality is evaluated in this section using the well-established approach to visual analysis adopted by the FHWA (Jones et al. 1975, FHWA 2015), employing the concepts of vividness, intactness, and unity, as defined below:

- Vividness is the visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the artificial landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity, discussed below. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Visual Sensitivity and Viewer Response

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity is based on the visibility of resources in the viewshed, the proximity of

viewers to the visual resource, the elevation of viewers relative to the visual resource, the frequency and duration of viewing, the number of viewers, and the type and expectations of individuals and viewer groups.

The criteria for identifying the importance of views are related in part to the position of the viewer relative to the resource. To identify the importance of views of a resource, a viewshed may be divided into distance zones of foreground, middle ground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater is its importance to the viewer. Although distance zones in viewsheds may vary between different geographic regions or types of terrain, a commonly used set of criteria identifies the foreground zone as 0.25–0.5 mile from the viewer, the middle ground zone as extending from the foreground zone to approximately 3–5 miles from the viewer, and the background zone as extending from the middle ground zone to infinity (USFS 1974).

Judgments of visual quality and viewer response must be made based in a regional frame of reference (U.S. Soil Conservation Service [USSCS] 1978). The same type of visual resource in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element in a flat landscape but have very little significance in mountainous terrain.

Generally, visual sensitivity is higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking, or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USFS 1974, USSCS 1978, FHWA 2015). Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they generally are considered to have moderate to high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

3.2.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to aesthetics for the Program Renewal. Applicable local plans, policies, regulations, or ordinances related to aesthetics are presented in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C discusses several plans throughout the County and local jurisdictions that contain relevant strategies, policies, and goals for preserving scenic resources and enhancing aesthetic qualities of the natural and built environment through protecting natural scenery and minimizing potential visual effects of new projects.

Federal Plans, Policies, Regulations, and Laws

No federal plans, policies, regulations, or laws related to aesthetics are applicable to the Program Renewal.

State Plans, Policies, Regulations, and Laws

California Department of Transportation State Scenic Highway System

The California Scenic Highway Program was established in 1963, under Sections 260 through 263 of the Streets and Highways Code to preserve and enhance the natural beauty of California (California Department of Transportation [Caltrans] 2024). The Scenic Highway Program includes a list of highways that are either designated or eligible for designation as scenic highways (Caltrans 2024). For a State Scenic Highway-eligible roadway to be officially designated, the local jurisdiction in which it resides must adopt a scenic corridor protection program and apply to Caltrans for scenic highway approval, identifying and defining the scenic corridor of the highway. Once approved by Caltrans, the local jurisdiction receives notification that the highway has been designated a State Scenic Highway. The local jurisdiction must then adopt ordinances to preserve the scenic quality of the corridor or document the regulations that already exist in various portions of local codes, creating the scenic corridor protection program. A scenic corridor is defined as land that is visible from the highway right of way and comprised primarily of scenic and natural features. Scenic corridor boundaries are determined by topography, vegetation, viewing distance, and/or jurisdictional lines. Officially designated State Scenic Highways are marked with a California poppy, the logo for the California Scenic Highway Program.

The State Scenic Highways relevant to the Program Renewal are described in Section 3.2.3, "Environmental Setting."

3.2.3 Environmental Setting

Regional Visual Character

Santa Clara County's major topographic features include the Baylands, the Santa Clara Valley, the Diablo Range to the east, and the Santa Cruz Mountains to the west. The Baylands are in the northwestern part of the County, adjacent to the waters of the southern San Francisco Bay, and consist mostly of salt evaporation ponds and areas of salt marsh and wetlands. The Santa Clara Valley is oriented in a northwest-southeast direction and is surrounded by rolling hills. The entire eastern half of the county is encompassed by the Diablo Range, which is covered by grasslands, brush, and oak savannah. The lands of the Diablo Range typically have much less natural vegetative cover and far fewer stands of trees than the Santa Cruz Mountains (County of Santa Clara 2005). On the western side of the valley, the lower elevations of the Santa Cruz Mountains are characterized by rolling grasslands and oak-studded foothills. In the higher elevations of the Santa Cruz Mountains, the landscape transitions to mixed hardwoods and dense evergreen forests (County of Santa Clara 1994).

Urbanization in Santa Clara County has primarily occurred in the northern part of Santa Clara Valley. The majority of the county's residents (approximately 90 percent) and cities (13 out of 15) are located in the North Valley. The remaining two cities, Gilroy and Morgan Hill, are located in the South Valley. Unlike the North Valley, the South Valley is predominantly rural, with the exception of Gilroy, Morgan Hill, and the small unincorporated community of San Martin. Low-density residential developments predominate in both valley areas and the surrounding foothills (County of Santa Clara 1994).

Viewsheds

Views from the Santa Clara Valley floor are primarily of the foothills, ridges, and/or summits of the Santa Cruz Mountains and the Diablo Range. The topography and ridgelines within the County are highly variable. Along the eastern Diablo Range, prominent ridges run generally parallel to the Santa Clara Valley floor, from northwest to southeast. However, the Santa Cruz Mountains have a dominant ridge (the Summit Road area) that divides Santa Clara County from San Mateo and Santa Cruz Counties and intervening lower ridge areas. The lower ridge areas have other ridges or hillsides as their backdrop and can be oriented in many directions. This topography results in the Diablo Range being more visible from the valley than the Santa Cruz Mountains to the east (County of Santa Clara 2005).

Public open spaces in the Program Renewal Area with scenic vistas include Almaden Quicksilver, Calero, Coyote Lake–Harvey Bear Ranch, Ed Levin, Mt. Madonna, Santa Teresa and Upper Stevens Creek county parks, and numerous smaller regional and local parks (County of Santa Clara 2024a).

Scenic Highways and Corridors

One stretch of highway in the Program Renewal Area, a portion of the approximately 14-mile stretch of State Route (SR) 9 from the Santa Cruz County line to the Los Gatos city limits, has been officially designated by Caltrans as a State Scenic Highway (Caltrans 2024). In the Program Renewal Area, this State Scenic Highway follows upper Saratoga Creek and crosses Wildcat Creek within the West Valley Watershed (see Figure 2-3 in Chapter 2, *Project Description*).

Six stretches of highway, either completely or partially within Santa Clara County, have been identified as eligible for designation as State Scenic Highways: SR 9 from Monte Sereno to SR 17 near Los Gatos; SR 17 from SR 1 near Santa Cruz to SR 9 near Los Gatos; SR 35 from SR 17 to SR 92; SR 152 from SR 156 near San Felipe to Interstate 5; SR 156 from SR 1 near Castroville to SR 152 northeast of Hollister; and Interstate 280 from SR 17 to Interstate 80 near First Street in San Francisco.

Santa Clara County also has designated an extensive network of roadways as Scenic Highways. This network includes unincorporated areas of the county, offering a diversity of viewsheds to travelers. State Highways 9, 17, 35, 101, 152, 156, 280, and 680 and numerous local roads are identified as existing or proposed Scenic Highways (County of Santa Clara 1994, 2008).

In addition, some of the incorporated cities within Santa Clara County have identified scenic corridors and aesthetic resources. Overall, these are located around waterways and roadways that are identified by the County with views of the hillsides surrounding each city. Consistency of the Program Renewal with local policies to protect scenic corridors and aesthetic resources is discussed in Appendix C.

Where scenic highways and corridors intersect with Valley Water-maintained facilities, views from these highways and corridors could be affected by Program Renewal maintenance activities. In the Program Renewal Area, maintenance activities at tributary drainages to the Lexington Reservoir may be visible from SR 17 within the Guadalupe Watershed (see Figure 2-4 in Chapter 2, *Project Description*).

Recreational Trails

Access roads that parallel most Valley Water-maintained channels also provide creek side recreational (formal and informal) access. Some of these access roads are formalized as recreational trails, with signage and other amenities, such as benches. In other locations, access roads serve as informal creek side trails or pathways. Where accessible, these trails are used for a variety of recreational activities including walking, jogging, biking, dog-walking, and bird watching. Creek-side trails typically are composed of consolidated earth or gravel or are fully paved. These trails provide an important recreational resource, particularly in the urban environment and provide aesthetic value for recreational users. Where recreational trails intersect with Valley Water-maintained facilities, views from these trails could be affected by Program Renewal maintenance activities.

Aesthetic Quality at Program Renewal Facilities

The creeks in Santa Clara County drain runoff from the Santa Cruz Mountains and the Diablo Range to the valley floor and, eventually, to either Monterey Bay or San Francisco Bay. Many of these waterbodies flow through or near the County's urban areas, offering potential opportunities for views of creeks and stream channels depending on the surrounding bank vegetation, access to or along the channels, and other view-restricting factors. As described in Chapter 2, *Project Description*, channels within the Program Renewal Area are either considered modified, which generally consist of grass-lined or concrete-lined bed or bank or unmodified, which generally are earthen channels with small areas of modification (e.g., bridges, culverts, outfalls). The aesthetic quality of Valley Water-maintained facilities varies from reaches with limited vegetation to reaches supporting a full riparian canopy. Figures 2-7 through 2-8 in Chapter 2, *Project Description* show representative photos of channels within the Program Renewal Area. Many of the channel reaches that would be maintained under the Program Renewal are located along public roadways or trails. Public access adjacent to the Program Renewal channels may be provided by trails that would be located along the top of banks and at creek crossings.

Thus, some creeks maintained under the Program Renewal would be viewed by recreationalists, such as bicyclists, joggers, and horseback riders, as well as residents, people working in proximity to the creeks, other pedestrians, and motorists.

Valley Water has conducted maintenance activities under the Stream Maintenance Program (SMP) since 2002. Although the Program Renewal includes some updates to maintenance activities, the baseline for analysis of impacts is a stream system that has already been altered by maintenance activities on an ongoing basis.

Viewer Groups and Viewer Responses

Viewer groups in the vicinity of the Program Renewal Area and their sensitivity to visual changes in the area are described below. Viewer groups that have visual access to maintained facilities are divided into four categories: recreational users, residents, workers, and motorists.

Recreational Users

Recreational use in the Program Renewal Area includes a variety of activities, such as walking, jogging, biking, dog-walking, and bird watching. Many hiking trails within County

parks, such as Almaden Quicksilver, Sanborn-Skyline, Rancho San Antonio, Joseph D. Grant, Calero, Mt. Madonna, Coyote Lake–Harvey Bear Ranch, Ed Levin, and Anderson Lake, provide views of the Santa Clara Valley, the Bay, and/or the surrounding mountain ranges (County of Santa Clara 2024b). Viewer sensitivity for recreational users is considered moderately high because these users typically value the natural environment, appreciate the visual experience, and are sensitive to changes in views.

Residents

Residents are individuals whose homes are in proximity to Valley Water-maintained facilities in the Program Renewal Area. Similar to recreational users, viewer sensitivity among residents is moderately high because they are likely to highly value their local visual resources, appreciate the visual experience, and be sensitive to changes in views.

Workers

Workers are individuals whose place of employment is in proximity to Valley Water-maintained facilities in the Program Renewal Area, or who may come into contact with such facilities as part of their work activities (e.g., delivery persons). Viewer sensitivity is low to moderate among workers because they generally are not highly focused on the visual resources surrounding their workplace and are less sensitive to changes in views.

Motorists

Motorists use roadways at varying speeds; normal highway and roadway speeds differ based on the design speed of the roadway, traffic volumes, traveler's familiarity with the route, and roadway conditions (e.g., presence/absence of rain). Single views typically are of short duration, except on straighter stretches where views last slightly longer. Motorists who frequently travel the same routes generally possess low to moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on passing views but on the roadway, roadway signs, and surrounding traffic. Motorists who travel local routes for sight-seeing purposes generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with higher regard and as a holistic visual experience.

Viewer sensitivity is expected to be moderately low for most motorists within the Program Renewal Area. The passing viewshed would be familiar and at standard roadway speeds, views would be of short duration. Thus, motorists would tend to be focused on the roadway and surrounding traffic.

3.2.4 Impact Analysis

Methodology

This section describes the methods used to determine whether the Program Renewal would result in significant impacts related to aesthetic resources. The significance criteria included in the section below were used to evaluate the Program Renewal's effects on aesthetic resources. The existing baseline conditions used in this analysis were the existing conditions at the time of the 2022 NOP publication. The visual analysis is based on evaluation of County maps and Valley Water's ground-based photographs of the Program Renewal maintenance sites.

Visual effects were assessed based on the Program Renewal's potential to substantially damage scenic resources (e.g., scenic roads, trees, and rock outcroppings), degrade the visual character or quality of the site, or impact a scenic vista or viewshed compared to the baseline conditions. The degree of impact depends both on the magnitude of change in the visual resource (i.e., visual character and quality) and on viewers' responses to and concern for those changes.

The evaluation of temporary or short-term visual impacts considers whether activities could substantially degrade the existing visual character or quality of the site or surrounding area, as well as the duration over which any such changes would occur. Because of their short-term nature, maintenance activities are typically considered to have less-than-significant effect on visual quality.

Actions with long-term visual effects, such as constructing new or altered structures, removing trees, and introducing new sources of nighttime light and daytime glare, can permanently alter the landscape in a manner that could affect existing scenic resources and the visual character or quality of the area, depending on the perspective of the viewer. In determining impact potential, the assessment considers the visual sensitivity of the Program Renewal Area. However, new structures and new sources of light are not proposed as part of the Program Renewal.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, it was determined that the Program Renewal would result in a significant impact on aesthetics if it would:

A. have a substantial adverse effect on a scenic vista;

B. substantially damage publicly visible scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings viewed from a state or locally designated scenic highway;

C. substantially degrade the existing visual character or quality of public views of the site and its surroundings in non-urbanized and urbanized areas;

D. conflict with applicable zoning and other regulations governing scenic quality in urbanized areas; or

E. create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Several Appendix G significance criteria were modified in this section to better fit the Program Renewal. Specifically, significance criterion (b) was modified to include locally designated scenic highways in addition to state designated scenic highways, and significance criterion (c) was modified to include an analysis of potential impacts to visual character and quality in urban areas due to a large portion of the Program Renewal Area being within urbanized portions of Santa Clara Valley.

Environmental Impacts

Impact AES-1: Substantial Adverse Effects on Scenic Vista (Less than Significant)

Views of scenic vistas from scenic vista viewpoints within the Program Renewal Area are generally located at relatively high elevations along ridgelines within public open space areas and are typically viewed by recreational hikers and bicyclists, and motorists. No proposed maintenance activities would be conducted above the 1,000-foot elevation contour where the majority of scenic vista viewpoints in Santa Clara County are located. Most Program Renewal activities would be conducted in urban areas, at lower elevations, mostly on the valley floor. In addition, Program Renewal maintenance activities including vegetation management (e.g., pruning, coppicing, mowing, grazing, herbicide application, and vegetation/tree removal), sediment removal from channels, bank stabilization, downed tree management, management of animal conflicts (e.g., levee compaction, filling in burrows, non-lethal trapping), and minor maintenance (e.g., fence repairs, graffiti removal, access road maintenance, trash and debris removal) would occur within channel corridors; therefore, it is unlikely that these activities would be highly visible from scenic vista viewpoints in the higher elevation areas of Santa Clara County.

Although temporary views of maintenance vehicles, machinery, and personnel may be available at varying degrees during implementation of Program Renewal activities, maintenance work at any given site would be relatively short in duration (lasting no longer than a few weeks in most cases). Additionally, once maintenance is completed, the visual conditions at Valley Water's facilities would not substantially change the degree that could cause an adverse effect on views of a scenic vista. Although vegetation management activities such as tree removal, pruning, coppicing, and downed tree management could somewhat alter the near-term character of the riparian corridor, it would not be highly noticeable when viewed from a scenic vista viewpoint. Bank stabilization projects would result in some sections of visibly altered banks with new materials; however, given the number of bank stabilization projects conducted each year (up to 1 mile), adverse effects on scenic vistas would be minimal. Moreover, the repair of a severely eroded bank is generally an improved aesthetic condition to most viewers compared to a damaged/threatened embankment. Sediment removal would visibly clear the channel of sediment; however, such changes would not be noticeable from a scenic vista viewpoint. Other Program Renewal activities such as management of animal conflicts and minor maintenance would be small in scale and would not be visible from scenic vista viewpoints.

Applicable Best Management Practices

The BMPs summarized below would be implemented to minimize impacts on views of a scenic vista. Full descriptions of each BMP are provided in Table 2-10 in Chapter 2, *Project Description*.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work areas, staging areas, and access routes are kept to the minimum area necessary to complete the maintenance work to minimize potential visual effects. As feasible, staging areas and access routes will be located within existing disturbed areas and along existing access roads.
- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize potential visual effects.

- **BMP REVEG-1: Seeding** will ensure that exposed soils are stabilized with native seed to prevent erosion and to minimize temporary visual effects associated with disturbed areas.
- **BMP REVEG-2: Planting Material** will ensure that revegetation and replacement plantings consist of locally collected materials. Selection of species to install in revegetation sites will reference natural areas along the same creek so that the work site has a similar ecological and visual setting to its surroundings.

Conclusion

Given the relatively minor effect that the Program Renewal activities would have on views of scenic vistas and through the implementation of BMPs to minimize effects on scenic vistas, this impact would be **less than significant** and would not require mitigation.

Mitigation Measures: No mitigation is required.

Impact AES-2: Substantial Damage to Publicly Visible Scenic Resources, Including but not Limited to Trees, Rock Outcroppings, and Historic Buildings Viewed from a State or Locally Designated Scenic Highway (Less than Significant with Mitigation)

For purposes of this analysis scenic resources are defined as areas that contribute to the aesthetic value of a landscape and may include views, natural formations, and mature, healthy trees with aesthetic value. Thus, substantial damage to scenic resources would occur if Program Renewal activities resulted in degradation of high-quality views of natural landscapes or substantial tree removal that was publicly visible including from a State or locally designated scenic route.

As described above in Section 3.2.3, "Environmental Setting," one stretch of SR 9 within the Program Renewal Area is officially designated by Caltrans as a State Scenic Highway and portions of SR 9, SR 17, SR 35, SR 152, SR 156, and I 280 are eligible for listing as State Scenic Highways. Additionally, the County has designated a number of roads within the Program Renewal Area as scenic freeways, expressways, arterial, and rural routes (County of Santa Clara 2008). These scenic routes generally provide views of the hills surrounding Santa Clara County. Additionally in many locations, access roads that also serve as recreational trails parallel Valley Water-maintained channels. These recreational trails provide views of scenic resources, including trees, along Valley Water-maintained channels and facilities. The Program Renewal would not result in substantial damage to rock outcroppings or historic buildings; for more information on historic resources, refer to Section 3.5, "Cultural and Paleontological Resources."

Maintenance activities may occur in channels which intersect with or are adjacent to State scenic highways, locally designated scenic routes, or recreational trails. Thus, some maintenance activities in proximity to scenic highways, scenic routes, and recreational trails could temporarily disrupt views. However, such views of maintenance equipment and activities in these locations would be temporary as maintenance activities would be conducted infrequently at any given location.

Maintenance activities, including sediment removal, bank stabilization, management of animal conflicts, and minor maintenance would be short in duration and thus views of these activities would be temporary. Even in the case of repeat activities (e.g., rodent control), the

appearance of these maintenance activities and post-maintenance alterations would not leave a lasting impression on the overall view from the window of a car traveling at highway speeds. Additionally, because these activities would temporary and would help improve water quality, safety, and the aesthetic quality of the area, these activities would not significantly impact the views of passing recreationalists on creek-side trails.

Vegetation management activities such as pruning, coppicing, and vegetation removal would result in a change to the visual condition of the riparian area and could disrupt views along these scenic corridors and recreational trails. Although vegetation management activities would occur in multiple locations at any given time, the majority of these activities would be conducted infrequently at any particular location, allowing the vegetation to grow back once activities are completed. For downed trees, Valley Water would retain downed trees that qualify as large woody debris in salmonid creeks, where feasible to preserve the ecological function of wood within waterways. Downed trees would only be removed if they posed a flood or safety risk to infrastructure. As such and given that viewers along these scenic routes would be traveling at highway speeds, vegetation management activities would not substantially damage the overall scenic resources along these corridors. Additionally, vegetation management activities along these creek-side trails may improve the views experienced by recreationalists and ensure that overgrown vegetation is removed and thus, would not substantially damage scenic resources along these trails.

Tree removal would be required along some Valley Water-maintained channels. All tree removal would be evaluated carefully and would only be conducted under circumstances where the channel conveyance capacity is reduced, the structural integrity of a facility is compromised, growth is limited and damaging facilities, necessary visual inspection of infrastructure is prevented, or the tree poses a wildfire or public safety risk. Because hazard trees are either dead, dying, or unstable, they would not be considered a scenic resource, and their removal would generally involve a visual improvement at the site. Mature and healthy trees (i.e., non-hazard trees) may be considered valuable scenic resources. Non-hazard tree removal conducted under the Program Renewal would be limited to the removal of 400 live trees per year for trees 6-12 inches in diameter at breast height (dbh) and up to 20 live trees per year for trees greater than 12 inches dbh. Additionally, over the 10-year Program Renewal period, up to 2,000 live trees 6-12 inches dbh may be removed and up to 150 live trees over 12 inches dbh may be removed. Although mature, healthy trees may be removed under the Program Renewal, no more than 20 percent of the overstory canopy would be removed in any reach, and at least 50 percent of the understory canopy of native vegetation would be retained. However, the degradation of scenic resources (i.e., removal of mature, healthy trees) would be a significant impact.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce the potential for maintenance activities from substantially degrading publicly visible scenic resources, including within state and locally designated scenic highways. Full descriptions of each BMP are provided in Table 2-10 in Chapter 2, *Project Description*.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work areas, staging areas, and access routes are kept to the minimum area necessary to complete the maintenance work to minimize potential visual effects. As

feasible, staging areas and access routes will be located within existing disturbed areas and along existing access roads.

- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize potential visual effects.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on existing habitat conditions due to staging and stockpiling materials, including erosion control measures during the wet season.
- **BMP REVEG-1: Seeding** will ensure that exposed soils are stabilized with native seed to prevent erosion and to minimize temporary visual effects associated with disturbed areas.
- **BMP REVEG-2: Planting Material** will ensure that revegetation and replacement plantings consist of locally collected materials. Selection of species to install in revegetation sites will reference natural areas along the same creek so that the work site has a similar ecological and visual setting to its surroundings.

Conclusion

Even with the implementation of the above-listed BMPs, there would still be significant impact on scenic resources associated with tree removal. Implementation of **Mitigation Measure BIO-12, Compensatory Mitigation for Impacts to Woody Riparian Vegetation,** in Section 3.4, "Biological Resources," would ensure that any temporary or permanent impacts associated with tree removals would be mitigated by one or more of the following approaches including replacing non-invasive trees greater than 6 inches dbh with native trees within the same watershed; developing reach characterization sheets that inform vegetation plantings to maintain ecological equilibrium; and enhancing ecosystem recovery following large wildfires. Although there would be a short-term visual impact associated with tree removal before the replacement trees mature, these effects would be temporary. Implementation of BMPs including BMPs REVEG-1 (Seeding) and REVEG-2 (Planting Material) would reseed exposed soils and include revegetation with planting material to minimize these temporary visual effects. In conclusion, implementation of **Mitigation Measure BIO-12** would substantially reduce the impact on publicly visible scenic resources (mature, healthy trees) resulting from the Program Renewal. The impact would be **less than significant with mitigation**.

Mitigation Measure: BIO-12 (Refer to Section 3.4, "Biological Resources")

Impact AES-3: Substantial Degradation of the Existing Visual Character or Quality of the Site and its Surroundings in Non-urbanized and Urbanized Areas (Less than Significant)

Program Renewal activities would occur in both non-urbanized and urbanized areas of the Program Renewal Area. Thus, the visual character and quality of facilities maintained under the Program Renewal varies widely from densely vegetated riparian corridors along channels to sparsely vegetated concrete-lined channels (see Figures 2-7 and 2-8 in Chapter 2, *Project Description*). Viewing opportunities of activities range from roadways, which parallel or cross the channels; adjacent residential and commercial structures in urbanized areas; and recreational trails along channels and in open space areas and park lands. Thus, degradation

of the visual character of maintenance sites could adversely affect sensitive user groups such as recreationists and residents.

During maintenance activities, the visual character at a given location may be somewhat degraded at the immediate time work is conducted due to the presence of maintenance equipment, materials, and vehicles. However, maintenance activities at any given site would be temporary, varying in duration from a couple of weeks to several months during the in-stream work season. Depending on the maintenance site, visual conditions could improve as a result of proposed maintenance activities.

Proposed maintenance activities would involve vegetation management (e.g., pruning, coppicing, mowing, grazing, herbicide application, and vegetation/tree removal), sediment removal from channels, bank stabilization, downed tree management, management of animal conflicts (e.g., levee compaction, filling in burrows, non-lethal trapping), and minor maintenance (e.g., fence repairs, graffiti removal, access road maintenance, trash and debris removal). The following paragraphs describe the Program Renewal's effects on the visual character and quality.

Vegetation Management

Vegetation management activities such as mowing, pruning, coppicing, grazing, herbicide application, mitigation site maintenance, nonnative invasive plant management, and vegetation/tree removal would result in a change to the existing visual condition of the site and could degrade the visual character if it were to remove major large stands of vegetation. Additionally, a temporary visual impact would occur from the presence of maintenance crews and equipment near channels. Although vegetation management activities would occur in multiple locations at any given time, the majority of these activities would be conducted infrequently at any particular location, allowing the vegetation to grow back once activities are completed.

In some areas, herbicide treatment would be conducted frequently to maintain the location in a permanently denuded state. Though limited, this type of treatment would alter the visual quality and character of the area over the long term. However, maintaining areas in this state could have a beneficial effect by promoting viewing consistency (as opposed to alternating views of cleared areas and regrowth stages) and minimizing views of overgrowth. Similarly, pruning, mowing, grazing, coppicing, vegetation removal, and invasive plant management activities would alter a densely vegetated area to a partially vegetated or bare area; however, these activities could have a beneficial effect by reducing views of overgrown vegetation until newly planted vegetation grows in. Further, revegetating areas with native species would improve the long-term aesthetic value of the riparian corridor.

Because the work locations of vegetation management activities vary year to year and because the Program Renewal has self-imposed limits, vegetation management activities would not substantially change the visual character of Valley Water sites and surroundings. Additionally, such vegetation management activities would not be any different than those currently conducted by Valley Water. Furthermore, maintaining vegetation along Valley Water channels and other facilities could have a beneficial effect by minimizing views of overgrowth.

Tree removal would be required along some Valley Water channels, which could degrade the existing visual character of the site and its surroundings if it were to remove large stands of trees or remove trees in areas where existing trees are sparse. All tree removal activities would be evaluated carefully and would only be conducted under circumstances where the channel conveyance capacity is reduced, the structural integrity of a facility is compromised, necessary visual inspection of infrastructure is prevented, or the tree poses a wildfire or public safety risk. Because hazard trees are either dead, dying, or unstable, their removal would generally involve an improvement of the visual condition at the site. However, the removal of mature and healthy trees (i.e., non-hazard trees) could result in a substantial impact to the riparian corridor. As described above under Impact AES-2, the Program Renewal includes self-imposed limits that would limit the number of live trees that may be removed each year and over the 10-year Program Renewal period. Additionally, no more than 20 percent of the overstory ~~tree~~ canopy would be removed in any reach, and at least 50 percent of the understory canopy of native vegetation would be retained. For these reasons, this visual change would generally be considered less than significant.

Sediment Removal and Bank Stabilization

Sediment removal and bank stabilization activities would result in exposed and unvegetated channels at the maintenance location. Sediment removal would visibly clear the channel of sediment, vegetation, or blockages which could result in a significant change compared to the existing condition; however, clearing sediment and blockages would allow the channel to function more naturally, resulting in an aesthetic benefit. Sediment removed from Valley Water-maintained channels would be disposed or reused in various ways, depending on the quality of the excavated material.

Although bank stabilization projects would result in some sections of visibly altered banks with new materials, they would be limited to up to one linear mile of channel annually and softscape and hardscape/hybrid repair methods would be limited to 500 linear feet and 300 linear feet per project, respectively. Each bank repair site would also be revegetated through hydroseeding on disturbed earth areas when work is completed and some repair approaches would incorporate vegetation as part of the design (e.g., live construction with boulder base, contour wattling, brush mattress, etc.) Refer to Attachment D of the SMP Manual (provided in **Appendix A** of this DSEIR) for a description of bank stabilization techniques, designs, and photographs. Although the visual character of the site would be somewhat degraded until the planted vegetation re-establishes, the repair of a severely eroded bank is generally an improved aesthetic condition to most viewers compared to a damaged/threatened embankment.

Viewer response to altered channels and riparian corridors after conducting bank stabilization and sediment removal activities may vary. Commuters on creek-side trails who pass the site on a daily basis may react to the changed conditions; similarly recreational users may also notice a change. However, such changed conditions would be temporary as vegetation would grow back over time and the eroded bank or clogged channel would be repaired. In addition, work would occur at isolated locations and work limits would be in place to limit the size of the repair so work would not occur along the entire channel reach.

Downed Tree Management

Downed trees include fallen trees, logs, or limbs in the channel. For any downed tree, Valley Water would assess if the downed tree or log poses a potential flood risk or is likely to damage

infrastructure. Downed trees may also provide valuable natural resource functions and therefore, aesthetic benefits along anadromous salmonid channels. Downed trees that meet certain size requirements and are within salmonid creeks may be considered large woody debris and are retained where feasible. Thus, downed trees or large woody debris would only be removed or repositioned if they are capturing or trapping additional debris, reducing the channel conveyance capacity, or pose a flood or infrastructure risk. Because downed trees would be retained where possible to provide ecological benefits and because work would occur at isolated locations, there would not be significant change in the visual character of the site and its surroundings. Furthermore, in locations where trash rafts or debris jams are found associated with downed trees, removing or modifying the downed tree would result in a visual benefit to the site by removing accumulated and embedded trash and debris from the channel.

Management of Animal Conflicts

Other than the temporary presence of maintenance personnel and vehicles, proposed animal conflict management activities would not involve actions that would result in a significant degradation of the visual character or quality of a site. Additionally, these activities would be isolated and small in scale. Over the long term, the management of animal conflicts may result in benefits to the visual character or quality of treated areas as the integrity of Valley Water facilities would be preserved and visual damage would be minimized by repairing damage caused by animal activity (i.e., burrowing).

Minor Maintenance

Minor maintenance activities such as minor sediment removal; trash and debris removal; fence and gate repair; grading, structure repair; maintenance of fish ladders, trash booms, tide gates, floodwalls, flood barriers, and stream gauges; work at maintenance yards; minor erosion repair, and maintenance of restoration sites would be small in scale and would have limited potential to adversely affect visual quality beyond the temporary presence of maintenance personnel and vehicles. Additionally, some minor maintenance activities, including trash and debris removal and fence maintenance would improve the cleanliness at maintenance sites and thus improve the visual quality and character of channels.

Applicable Best Management Practices

The BMPs summarized below would be implemented to prevent maintenance activities from substantially degrading the existing visual character or quality of the site and its surroundings. Full descriptions of each BMP are provided in Table 2-10 in Chapter 2, *Project Description*.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work areas, staging areas, and access routes are kept to the minimum area necessary to complete the maintenance work to minimize potential visual effects. As feasible, staging areas and access routes will be located within existing disturbed areas and along existing access roads.
- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize potential visual effects.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on existing habitat conditions due to staging and stockpiling materials, including erosion control measures during the wet season.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that channels will be graded so that they do not present a sudden vertical transition or other blockages that could erode when flows are restored and create significant visual changes in the channel.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within nontidal streams will be contoured and restored to pre-construction conditions following construction.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of bank will be protected by leaving vegetation to minimize potential erosion and reduce potential visual effects associated with vegetation removal.
- **BMP REVEG-1: Seeding** will ensure that exposed soils are stabilized with native seed to prevent erosion and to minimize temporary visual effects associated with disturbed areas.
- **BMP REVEG-2: Planting Material** will ensure that revegetation and replacement plantings consist of locally collected material. Selection of species to install in revegetation sites will reference natural areas along the same creek so that the work site has a similar ecological and visual setting to its surroundings.

Conclusion

By conducting Program Renewal activities (i.e., such as vegetation management, sediment removal, trash and debris removal, bank stabilization), Valley Water is improving the environmental condition at their facilities by reducing the risk of flooding, preventing or halting erosion, and enhancing habitat by removing invasive species. In many cases, proposed maintenance activities (particularly trash and debris removal and bank stabilization) would also improve visual conditions at each site. Therefore, the Program Renewal would not substantially degrade the existing visual character or quality of the site and its surroundings, BMPs to minimize effects on visual quality would be implemented, and impacts would be **less than significant** and would not require mitigation.

Mitigation Measures: No mitigation is required.

Impact AES-4: Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality in Urbanized Areas (Less than Significant)

A majority of the Program Renewal activities would occur within urban areas of Santa Clara County, as described above. Because the Program Renewal focuses on maintaining existing public infrastructure to ensure facilities are operating properly, the Program Renewal would not substantially change the scenic quality of a maintenance site nor conflict with zoning or other regulations governing scenic quality. Program Renewal consistency with local policies and ordinances governing scenic quality in urbanized areas is discussed in Appendix C.

Applicable Best Management Practices

None applicable.

Conclusion

For the reasons described above, impacts associated with the Program Renewal conflicting with applicable zoning or other regulations governing scenic quality would be **less than significant**. No mitigation is required.

Mitigation Measures: No mitigation is required.

Impact AES-5: Substantial Alteration to Day or Nighttime Views resulting from Additional Light or Glare (No Impact)

Program Renewal maintenance activities would be conducted during daylight hours only. No nighttime lighting would be utilized for maintenance activities. The Program Renewal would not involve construction of new facilities or modifications to existing facilities that would result in new reflective surfaces or installation of lighting. Therefore, no impact related to new sources of light or glare would occur.

Applicable Best Management Practices

None applicable.

Conclusion

For the reasons described above, **no impact** related to new sources of light or glare would occur.

Mitigation Measures: No mitigation is required.

3.3 Air Quality

3.3.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) related to air quality.

Specific to this section is the term "sensitive receptors," meaning those who are particularly susceptible to the adverse effects of air pollution. These include children, the elderly, and people with illnesses. Examples include schools, nursing homes, hospitals, and residential areas. Sensitive receptors adjacent to stream reaches in the Program Renewal Area are numerous, and include people in residential areas, schools, elder care facilities, and hospitals.

3.3.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to air quality for the Program Renewal. Applicable regional and local plans, policies, regulations, or ordinances related to air quality are presented below and also in **Appendix C**, *General Plan Policies and Ordinances.*

In summary, Appendix C discusses several plans throughout the County and local jurisdictions that contain policies aimed at energy conservation and increase in renewable energy sources as well as transitioning to electrical vehicles and equipment. Local policies aim to reduce emission of criteria air pollutants and toxic air contaminants and encourage specific measures to reduce vehicle miles traveled (VMT), emissions from construction activities, and health risks.

Federal Plans, Policies, Regulations, and Laws

Clean Air Act

The U.S. Environmental Protection Agency (USEPA) carries out the provisions of the Clean Air Act (CAA), which was originally passed in 1963 and amended several times. and most recently in 2022. USEPA implements programs under the CAA that focus on reducing ambient air pollutant concentrations, reducing emissions of toxic pollutants, and phasing out the production and use of chemicals that destroy stratospheric ozone. USEPA sets ambient air limits, the National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: particulate matter, carbon monoxide, nitrogen oxides, sulfur oxides, ground-level ozone, and lead. The NAAQS are presented in **Table 3.3-1**. Primary standards are set for the protection of human health and secondary standards are set for environmental protection. Areas which meet the primary standards are considered in "attainment" while areas with air quality not meeting the primary standards are in "nonattainment."

Of the six criteria pollutants, particulate matter and ground-level ozone pose the most widespread threat to human health. Particle pollution poses the greatest threat to sensitive receptors including children, the elderly, and asthmatics, as it impairs lung function. Particle pollution includes very fine soot and dust. Sources of particulate matter include ground-disturbing activities (such as construction grading and excavation); motor vehicles; power

generation activities; industrial operations; burning of fuels (such as wood, oil, and coal); dust from unpaved roads; and crushing and grinding operations. Particle pollution can be carried by the wind and impair air quality far from its source. To reduce particle levels, USEPA regulates emissions from motor vehicles and point sources.

Table 3.3-1. State and Federal Ambient Air Quality Standards

Contaminant	Averaging Time	State Standards[1,3]	Primary Federal Standards[2,3,5]	Secondary Federal Standards[2,3,6]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	-	-
	8-hour	0.070 ppm (137 µg/m^3, see note 4)	0.070 ppm (137 µg/m^3)	Same as primary standard
Respirable Particulate Matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	-	-
Fine Particulate Matter ($PM_{2.5}$)	24-hour	-	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	9 µg/m^3 [12]	Same as primary standard
Carbon Monoxide	8-hour	9.0 ppm	9 ppm (10 mg/m^3)	None
	1-hour	20 ppm	35 ppm (40 mg/m^3)	None
Nitrogen dioxide	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3) [8]	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3) [8]	
Sulfur dioxide	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	-
	3-hour	-	-	0.5 ppm (1,300 µg/m^3) [9]
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)[9]	-
Lead[10]	30-day average	1.5 µg/m^3	-	-
	Calendar quarter	-	1.5 µg/m^3	Same as primary standard
	Rolling 3-month average[11]	-	0.15 µg/m^3	Same as primary standard
Visibility reducing particles	8-hour	See note 7	-	-
Sulfates	24-hour	25 µg/m^3	-	-
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	-	-
Vinyl Chloride[10]	24-hour	0.01 ppm (26 µg/m^3)	-	-

Notes: µg/m^3 = micrograms per cubic meter; PM2.5 = particulate matter less than 2.5 microns in diameter; PM10 = particulate matter less than 10 microns in diameter; ppm = parts per million by volume

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All

others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the USEPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the California Air Resources Board (CARB) to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more (0.07 per kilometer—visibility of 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.
8. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the USEPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
9. On June 2, 2010, USEPA established a new 1-hour sulfur dioxide (SO2) standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. USEPA also revoked both the existing 24-hour SO2 standard of 0.14 ppm and the annual primary SO2 standard of 0.030 ppm, effective August 23, 2010. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
10. CARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
11. National lead standard, rolling 3-month average: final rule signed October 15, 2008.
12. On February 7, 2024, the USEPA strengthened the NAAQS for the annual PM2.5 to 9.0 micrograms pe cubic meter. New designations for this standard will be available within two years of issuing the revised NAAQS. It is anticipated that Santa Clara County would not meet the new standard.

Sources: CARB 2016, USEPA 2024

Ground-level ozone is the primary component of smog. Ozone is formed from the interaction of reactive organic gases (ROG) and nitrogen oxides (NOx). ROG is emitted by motor vehicles, industrial activities, and consumer products (such as paints, inks, and adhesives). NOx is formed during the burning of fossil fuels such as gasoline, diesel fuel, coal, and oil. Weather and topography influence the formation and location of ground-level ozone. Hot temperatures spur the reaction between reactive organic compounds and nitrogen oxides to form ozone. Ground-level ozone settles into valleys when winds are calm, and temperatures are warm. Sensitive receptors to ozone are the same as those listed for particulate matter, with the addition of forests and agricultural crops.

Federal Vehicle Emission Standards

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the USEPA and National Highway Traffic Safety Administration (NHTSA) are responsible for establishing additional vehicle standards. The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. The USEPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. Based on information generated under the CAFE program, the Department of Transportation (DOT) is authorized to assess penalties for noncompliance.

In June 2024, the NHTSA announced the final rule for model years 2027 through 2031. The final rule established standards that require an industry-wide fleet wide average of approximately 50.4 miles per gallon (mpg) in 2031 for all passenger cars and light trucks, and an industry fleet-wide average of roughly 2.851 gallons per 100 miles in 2035 for heavy-duty pickup trucks and vans. The CAFE standards will increase at a rate of 2 percent per year for passenger cars in years 2027 through 2031 and 2 percent per year for light trucks in model years 2029 through 2031. The final heavy duty pickup trucks and vans fuel efficiency standards increase at a rate of 10 percent per year in years 2030-2032 and 8 percent per year in years 2033-2035 (NHTSA 2024).

State Plans, Policies, Regulations, and Laws

California Air Resources Board

The California Air Resources Board (CARB) was established in 1967. CARB has set California Ambient Air Quality Standards (CAAQS), presented in Table 3.3-1, that are more stringent than the NAAQS for most contaminants. These include standards for additional contaminants not covered in the NAAQS, including visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The California Clean Air Act was passed in 1988 and requires nonattainment areas to achieve and maintain the CAAQS by the earliest time practicable, and local air districts to develop attainment plans for state standards.

California Transportation-Related Standards and Regulations

The state has policies and legislation addressing air emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized

below. Treatment activities under the Program Renewal would involve fuel consumption and the use of on-road and off-road vehicles, which are subject to transportation-related standards and regulations.

The Clean Air Act allows California, among other states, to seek a waiver of preemption, which prohibits states from setting emission standards for new motor vehicles stricter than federal standards. EPA must grant a waiver before California's stricter standards may be enforced and has done so in the past. In 2025, Congress enacted Joint Resolutions 87, 88, and 89 (signed into law on June 12, 2025) to rescind California's waivers to set certain state motor vehicle standards stricter than federal standards. However, the legal status of these resolutions is uncertain due to a pending legal challenge by the State of California.

Zero Emission Vehicles Executive Orders

In March 2012, Governor Jerry Brown issued Executive Order (EO) B-16-12 establishing a goal of 1.5 million Zero-Emission Vehicles (ZEVs) on California roads by 2025. In addition to the ZEV goal, the EO stipulated the following: by 2015, all major cities in California must have adequate infrastructure and be "zero-emission vehicle ready"; by 2020, the state will have established adequate infrastructure to support 1 million ZEVs; by 2050, virtually all personal transportation in the state will be based on ZEVs; and greenhouse gas (GHG) emissions from the transportation sector will be reduced by 80 percent below 1990 levels in 2050.

On January 26, 2018, Governor Brown issued EO B-48-18 establishing a goal of 5 million ZEVs on California roads by 2030 and spurred the installation and construction of 250,000 plug-in electric vehicle chargers, including 10,000 direct-current fast chargers, and 200 hydrogen refueling stations by 2025.

In September 2020, Governor Gavin Newsom signed EO N-79-20, which sets the following state goals: 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the state will be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment will be zero emission by 2035 where feasible. This EO calls upon state agencies, including CARB, the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), the Department of Finance, and others to develop and propose regulations and strategies to achieve these goals.

Pavley Alternative Fuel Standards (AB 1007)

Assembly Bill (AB) 1007 (Pavley, Chapter 371, Statutes of 2005) required the CEC to prepare a state plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other state, federal, and local agencies. The final State Alternative Fuels Plan, published in December 2007, attempts to achieve an 80 percent reduction in GHG emissions associated with personal modes of transportation, even as California's population increases.

Advanced Clean Fleets and Cars

The Advanced Clean Truck (ACT) regulation, which was approved in March 2021, establishes ZEV sales requirements for medium and heavy-duty vehicles. The Advanced Clean Cars

Program regulations rapidly scale down emissions of light-duty passenger cars, pickup trucks, and SUVs and require an increased number of ZEV vehicles to meet air quality and climate change emissions goals.

The Advanced Clean Fleets (ACF) regulation is part of CARB's overall approach to accelerate a large-scale transition to zero-emission medium- and heavy-duty vehicles. This regulation works in conjunction with the ACT regulation, which helps ensure that ZEVs are brought to market. The ACF regulation applies to fleets performing drayage operations; those owned by state, local, and federal government agencies; and high priority fleets. High priority fleets are entities that own, operate, or direct at least one vehicle in California; have either $50 million or more in gross annual revenues; or own, operate, or have common ownership or control of a total of 50 or more vehicles (excluding light-duty package delivery vehicles). The regulation affects medium- and heavy-duty on-road vehicles with a gross vehicle weight rating greater than 8,500 pounds, off-road yard tractors, and light-duty mail and package delivery vehicles.

Manufacturers may only sell zero-emission medium- and heavy-duty vehicles starting in 2036. State and local government fleets, including city, county, special district, and state agency fleets, are required to ensure 50 percent of vehicle purchases are zero-emission beginning in 2024 and 100 percent of vehicle purchases are zero-emission by 2027. Small government fleets (those with 10 or fewer vehicles) and those in designated counties must start their ZEV purchases beginning in 2027. State and local government fleets may purchase either ZEVs or near-ZEVs, or a combination of ZEVs and near-ZEVs, until 2035. Starting in 2035, only ZEVs will meet the requirements. High priority and federal fleets must comply with the Model Year Schedule or may elect to use the optional ZEV Milestones Option to phase-in ZEVs into their fleets. For those following the model year schedule, fleets must purchase only ZEVs beginning 2024 and, starting January 1, 2025, must remove internal combustion engine vehicles at the end of their useful life as specified in the regulation. For those following the ZEV milestone option, fleets may elect to meet ZEV targets as a percentage of the total fleet starting with vehicle types that are most suitable for electrification.

The In-Use Off-Road Diesel-Fueled Fleets Regulation requires the following: imposes limits on idling, requires a written idling policy and reporting of vehicles to CARB, restricts adding older equipment to fleets and requires phase-out of the oldest engines, requires the use of renewable diesel (R99 or R100), and requires contracting agencies to have valid certificates of reported compliance for all listed contractors and subcontractors for equipment subject to this regulation.

Small Off-road Engine Regulation

Small off-road engines (SORE) are spark-ignition engines rated at or below 19 kilowatts. Engines in this category are primarily used for lawn, garden, and other small off-road equipment. CARB adopted emissions standards for SORE in 1990 and is currently working on new emission standards for SORE equipment to achieve the goals of Executive Order N-79-20, which sets a goal to transition off-road vehicles and equipment operations to 100 percent zero-emission vehicles by 2035 where feasible.

Portable Equipment Registration Program

The Statewide Portable Equipment Registration Program (PERP) establishes a system to uniformly regulate portable engines and portable engine-driven equipment units. After being

registered in this program, engines and equipment units and their owners or operators may operate throughout the state without the need to obtain permits from individual air districts. Owners or operators of portable engines and certain types of equipment can voluntarily register their units under this program. Operation of registered portable engines may still be subject to certain district requirements for reporting and notification. Engines with less than 50 brake horsepower are exempt from this program.

Airborne Toxic Control Measures Regulations

Airborne Toxic Control Measures (ATCM) regulations may also be applicable to the Program Renewal, including the following:

- ATCM for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater
- ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- ATCM to Reduce Particulate Emissions from Diesel-Fueled Engines Standards for Non-vehicular Diesel Fuel
- ATCM for Stationary Compression Ignition Engines
- Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations Asbestos ATCM for Surfacing Applications

Regional and Local Plans, Policies, Regulations, and Ordinances

CARB has designated fifteen air basins in the state. Thirty-five local air quality management districts are responsible for attainment and permitting in each basin and subbasin area. Santa Clara County is located in the San Francisco Bay Area Air Basin (SFBAAB). The Bay Area Air District oversees planning and permitting in the nine-county Bay Area, including Santa Clara County. Certain elements of the Program Renewal may be subject to Bay Area Air District permitting rules and regulations. This includes the following:

- **Regulation 2, Rule 1, General Permit Requirements.** This rule includes criteria for issuance or denial of permits, exemptions, and appeals against decisions of the Air Pollution Control Officer and Bay Area Air District actions on applications.
- **Regulation 6, Rule1, General Requirements.** This rule limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions, and opacity.
- **Regulation 6 Rule 6: Prohibition of Trackout.** This rule limits the quantity of PM in the atmosphere through control of trackout of solid materials onto paved public roads outside the boundaries of large construction sites.
- **Regulation 7, Odorous Substances.** Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Bay Area Air District staff investigate and track all odor complaints it receives, make attempts to visit the site and identify the source of the objectionable odor, and assist the owner or facility in finding a way to reduce the odor.

- **Regulation 8, Rule 15 Emulsified and Liquid Asphalts.** This rule limits the reactive organic gases content of asphalt available for use during construction through regulating the sale and use of asphalt and limits the ROG content of asphalt.
- **Regulation 11, Rule 14 Asbestos-Containing Serpentine.** The purpose of this rule is to control emissions from asbestos from unpaved road surfaces and other surfacing operations. This rule limits the use of serpentine material with greater than 5 percent asbestos content for covering roads or paths. This regulation is in line with the CARB's ATCM.

Bay Area Air District 2017 Clean Air Plan/Bay Area Air District CEQA Guidelines

The Bay Area Air District (formerly the Bay Area Air Quality Management District or BAAQMD[1]) has developed the Spare the Air-Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area Final 2017 Clean Air Plan (2017 Clean Air Plan), which details planned efforts to improve Bay Area air quality, including reducing PM and TAC emissions, and protect public health. In addition, the 2017 Clean Air Plan simultaneously updates the 2010 Clean Air Plan, which is the most recent ozone plan for the Bay Area, to comply with state air quality planning requirements and reduce ozone precursors (BAAQMD[2] 2017a). The 2017 Clean Air Plan contains a control strategy that includes 85 individual control measures to reduce emissions of criteria air pollutants and GHGs from the full range of emission sources. The measures include stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water (BAAQMD 2017a).

The Bay Area Air District published its latest version of the California Environmental Quality Act (CEQA) Guidelines in April 2023, to aid assessment of air quality impacts. The guidelines address evaluation of air quality impacts and their significance, and development of mitigation measures for significant impacts. The guidelines focus on criteria air pollutant, toxic air contaminant, and odor emissions generated from projects.

Additional regional and local policies related to air quality are listed in Appendix C.

3.3.3 Environmental Setting

Climate and Topography

Climate and topography dictate the potential for air pollution to build up or concentrate in geographic areas. Wind speed, inversions, atmospheric stability, solar radiation, and terrain all influence air pollution potential. The actual air quality is a function of the air pollution potential and the existing emissions at any given time.

Wind speed affects air quality because faster winds carry pollutants away from the source. Low wind speeds allow more pollutants to be emitted into the air mass per unit of time, leading to a buildup of pollutant concentration. Similarly, inversions influence the mass of air available for dilution by vertically limiting the distance pollutants can travel. An inversion

[1] The Bay Area Air District was formerly named the Bay Area Air Quality Management District (BAAQMD); the rebranding occurred in 2025. The Bay Area Air District documents that were prepared prior to 2025 and referenced in this EIR will be cited as BAAQMD.

occurs when the typical atmospheric condition of "temperature decreases with elevation increases" is reversed, or "inversed." Inversions may result in a layer of warmer air resting over a layer of cooler air. The denser cooler air is trapped below the less dense warm air. In this inversion situation, pollutants emitted are trapped beneath the warmer air aloft within the cooler air lower to the ground. This situation, in combination with reduced circulation, reduces opportunities for mixing and dispersion, potentially leading to higher pollutant concentrations and poorer air quality. Inversions in the Bay Area may limit the pollutant mixing depth of the lower air mass to as little as 50-100 meters above the ground surface. In the Bay Area, inversions can occur in the winter under conditions of cold, clear nights, with damp ground and little wind. Inversions also happen under warmer weather conditions when the fog systems keep ground temperatures cooler than the air above them (BAAQMD 2017c).

Atmospheric stability also influences the ability of pollutants to move vertically. Stability is defined as the atmosphere's resistance to vertical motions (BAAQMD 2017c). The more stable the air, the slower the mixing of pollutants into the air mass. Stability is dependent on the temperature gradient with elevation. A stronger standard temperature gradient (with temperatures decreasing with elevation increases) increases atmospheric instability and mixing. Atmospheric stability can cause reduced pollutant mixing and, therefore, increased air pollution potential.

Solar radiation is necessary for formation of ozone in the atmosphere. Ultraviolet sunlight and warm temperatures catalyze the chemical reaction between reactive organic gases and nitrogen oxides that form ozone. The frequent hot, sunny days in the Bay Area in the summer months promote ozone air pollution, particularly in the inland valleys where temperatures are warmest. Insufficient ultraviolet light and warmth in the winter reduce the likelihood of forming ozone (BAAQMD 2017c).

Topography influences air pollution principally through wind and circulation patterns. The lee side of mountains may be sheltered from the predominant winds, reducing turbulence and downward transport. Elevated terrains can create temperature and density driven circulations, with up-valley wind flows during daytime heating and down-valley flows during nighttime cooling (BAAQMD 2017c). In the Bay Area, typical on-shore regional wind patterns from the west and northwest can be reversed by seasonal off-shore flows, generating northeasterly and easterly winds. Winter cyclonic storms may bring southerly winds.

San Francisco Bay Air Subbasins

The Bay Area Air District divides the SFBAAB into subbasins with distinct climate and topography. Two air subbasins occupy Santa Clara County—the Peninsula and the Santa Clara Valley subbasins. The peninsula region of the Bay Area extends from the area northwest of San José to the Golden Gate, with the Santa Cruz Mountains extending up the center of the peninsula and terminating in South San Francisco. Small coastal towns on the west side of the mountains experience a high incidence of cool, foggy weather in the summer resulting from coastal ocean upwelling and northwest winds. Larger cities in the southeastern area of the peninsula, on the east side of the mountain range, experience warmer temperatures and few foggy days because the marine layer is blocked by the mountains to the west. Annual average wind speeds range from 5 to 10 miles per hour throughout the peninsula. On the east side of the mountains, the winds generally blow in a westerly pattern, although the wind patterns are influenced by local topographic features. The blocking effect of the Santa Cruz Mountains

results in higher temperatures in the eastern areas, with summertime maximum temperatures at Redwood City, representing the eastern peninsula, in the low 80s. The average minimum temperature in Redwood City is 40 degrees Fahrenheit (°F) in the winter and 52–54˚F in the summer. Air pollution potential is highest along the southeastern portion of the peninsula because this area is most protected from the high winds and fog of the marine layer, the emission density is relatively high, and pollutant transport from upwind sites is possible (BAAQMD 2017c).

The Santa Clara Valley subregion is bounded by the Santa Cruz Mountains to the west, the Diablo Range to the east, the San Francisco Bay to the north, and the convergence of the Gabilan Range and the Diablo Range to the south. The terrain of the Santa Clara Valley greatly influences the wind patterns and results in a prevailing flow roughly parallel to the Valley's northwest-southeast axis, with a north-northwesterly sea breeze extending up the valley during the afternoon and early evening and a light south-southeasterly drainage flow occurring during the late evening and early morning. Speeds are greatest in the spring and summer. The strongest winds generally occur during summer afternoon and evenings, although strong winds typically only occur during winter storms. In the summer, temperatures are warm during the day, with mostly cool nights. Near the San José airport, mean maximum temperatures range from the high 70s to the low 80s in the summer, and from the high 50s to the low 60s during the winter. Mean minimum temperatures are in the low 40s during the winter and in the high 50s during the summer. Further inland areas to the south may have greater temperature extremes because the moderating effect of the Bay is not as strong. Santa Clara Valley has a high air pollution potential because of the valley's large population; the transport of photochemical precursors from surrounding counties to the valley area; and the concentration of pollutants that occurs in the valley from the bordering mountains, winter inversions, and low-inversion summer days (BAAQMD 2017c).

Air Pollutants

Several air pollutants of concern would be associated with Program Renewal activities. These air pollutants are discussed briefly below. Two main categories of air pollutants are included: criteria air pollutants and toxic air contaminants (TACs). Criteria air pollutants are air pollutants with national and/or state air quality standards that define allowable concentrations of these substances in the ambient (or background) air. TACs are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations.

Ozone

Ozone (O_3) is a reactive gas that, in the troposphere (the lowest region of the atmosphere), is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when nitrogen oxides and reactive organic gases react in the presence of sunlight. Ozone at the Earth's surface causes numerous adverse health effects and is a criteria pollutant. For ozone, the adverse health effects could be mortality, emergency room visits (respiratory), and hospital admissions (respiratory). It is a major component of smog. In the stratosphere, ozone exists naturally and shields the Earth from harmful incoming ultraviolet radiation. High concentrations of ground-level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill natural communities, agricultural crops, and some human-made materials (e.g., rubber, paint, and plastics).

Nitrogen Oxides

Nitrogen oxides (NOx) are a family of gaseous nitrogen compounds that are precursors to the formation of ozone and particulate matter. The major component of NOx, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NOx results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion (use of natural gas for heating, cooking, and industrial use) are the major sources of this air pollutant.

Reactive Organic Gases

Reactive organic gases (ROG) consist of hydrocarbon compounds that exist in the ambient air. ROG contributes to the formation of smog and/or may itself be toxic. ROG emissions are a primary precursor to the formation of ozone. Sources of ROG include consumer products, paints, trees that emit ROGs, and the combustion of fossil fuels.

Particulate Matter

Particulate matter (PM) is a complex mixture of extremely small particles and liquid droplets. PM is made up of various components, including acids, organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to the potential for causing health problems. PM particles that are smaller than 10 micrometers in diameter, called PM_{10}, are of most concern because these particles pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. PM_{10} particles are typically found near roadways and industrial operations that generate dust. PM_{10} particles are deposited in the thoracic region of the lungs. Fine particles, called $PM_{2.5}$, are particles less than 2.5 micrometers in diameter and are found in smoke and haze. $PM_{2.5}$ particles penetrate deeply into the thoracic and alveolar regions of the lungs. When inhaled, $PM_{2.5}$ and PM_{10} can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks and cause or aggravate bronchitis and other lung diseases. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper in the lungs and damage lung tissues. Health effects of $PM_{2.5}$ include mortality (all causes), hospital admissions (respiratory, asthma, cardiovascular), emergency room visits (asthma), and acute myocardial infraction (non-fatal).

Toxic Air Contaminants

Hundreds of different types of toxic air contaminants exist, with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens or are known or suspected to cause birth defects or neurological damage. For some chemicals, such as carcinogens, no thresholds exist below which exposure can be considered risk-free. Examples of TAC sources in the Program Renewal Area include fossil fuel combustion sources, industrial processes, and gas stations.

Sources of TACs include stationary sources, area-wide sources, and mobile sources. The USEPA maintains a list of 187 TACs, also known as hazardous air pollutants. These hazardous air pollutants are also included on CARB's list of TACs. According to the California Almanac of Emissions and Air Quality (CARB 2013), many researchers consider diesel particulate matter (DPM) to be a primary contributor to health risk from TACs because particles in diesel exhaust carry a mixture of many harmful organic compounds and metals, rather than being a

single substance as are other TACs. Unlike many TACs, outdoor DPM is not monitored by CARB because no routine measurement method has been identified. However, using the CARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and results from several studies, CARB has made preliminary estimates of DPM concentrations throughout the state (California Office of Environmental Health Hazard Assessment [OEHHA] 2001).

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, headache). The ability to detect odors varies considerably among the population, and overall is subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be acceptable to another (e.g., roasting coffee). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is known as odor fatigue; a person can become desensitized to almost any odor, after which recognition occurs only with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the concentration in the air. When an odor sample is progressively diluted, the odor concentration decreases. As this occurs, the odor intensity weakens, and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odor reaches a level that is no longer detectable.

Air Quality Attainment Status

Air quality is a function of the climate, topography, and emissions in any area or upwind of that area. **Table 3.3-2** presents the attainment status of the state and federal standards in the Bay Area. The SFBAAB, including Santa Clara County, is in attainment status or unclassified for carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead pollutant standards. The SFBAAB, including the Program Renewal Area, is currently designated as a state and federal non-attainment area for ozone and $PM_{2.5}$, and a state nonattainment area for PM_{10}. In 2017, the Bay Area Air District completed its 2017 Clean Air Plan to outline the path towards attaining all state and federal air quality standards.

Table 3.3-2. Bay Area Attainment Status of the State and Federal Ambient Air Quality Standards

Contaminant	Averaging Time	State Standards Attainment Status[1]	Federal Standards Attainment Status[2]
Ozone	1-hour	N	See note 4
	8-hour	N[7]	N[3]
Respirable Particulate Matter (PM_{10})	24-hour	N	U
	Annual arithmetic mean	N[6]	
Fine Particulate Matter ($PM_{2.5}$)	24-hour		N[8,9]
	Annual arithmetic mean	N[6]	A

Contaminant	Averaging Time	State Standards Attainment Status[1]	Federal Standards Attainment Status[2]
Carbon Monoxide	8-hour	A	A[5]
	1-hour	A	A
Nitrogen Dioxide	Annual arithmetic mean		A
	1-hour	A	U
Sulfur Dioxide	24-hour	A	A
	1-hour	A	
Lead	30-day average	A	
	Calendar quarter		A
Visibility Reducing Particles	8-hour	U	
Sulfates	24-hour	A	
Hydrogen Sulfide	1-hour	U	
Vinyl Chloride	24-hour	Not available	

Notes: A = attainment; N = nonattainment; U = unclassified

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter—PM10, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
2. National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 parts per million (ppm) (75 parts per billion [ppb]) or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 micrograms per cubic meter ($\mu g/m^3$). The 24-hour $PM_{2.5}$ standard for particulate matter less than 2.5 microns in diameter (PM2.5) is attained when the 3-year average of 98th percentiles is less than 35 $\mu g/m^3$. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for particulate matter less than 10 microns in diameter (PM_{10}) is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially averaged across officially designed clusters of sites falls below the standard.
3. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. USEPA made recommendations on attainment designations for California by October 1, 2016, and issued final designations on June 4, 2018, classifying the San Francisco Bay Area Air Basin (SFBAAB) as being in nonattainment (Federal Register Vol. 83, No. 107, pp. 25776 25848). Nonattainment areas will have until 2020 to 2037 to meet the health standard, with attainment dates varying based on ozone level in the area.
4. The national 1-hour ozone standard was revoked by USEPA on June 15, 2005.
5. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
6. In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.
7. The 8-hour California ozone standard was approved by CARB on April 28, 2005, and became effective May 17, 2006.
8. On January 9, 2013, USEPA issued a final rule, determining that SFBAAB had attained the 24-hour $PM_{2.5}$ national standard. This rule suspends key SIP requirements as long as monitoring data continue to show that SFBAAB attains the standard. Despite this USEPA action, SFBAAB will continue to be designated as “nonattainment” for the national 24-hour $PM_{2.5}$ standard until the Bay Area Air District submits a “redesignation request” and a “maintenance plan” to USEPA, and USEPA approves the proposed redesignation.
9. On February 7, 2024, the USEPA strengthened the NAAQS for the annual PM2.5 to 9.0 micrograms per cubic meter. New designations for this standard will be available within two years of issuing the revised NAAQS. It is anticipated that Alameda County would not meet the new standard.

Sources: BAAQMD 2017b; USEPA 2023

Existing Air Quality Conditions

The USEPA, CARB, and local air districts operate an extensive air monitoring network to measure progress toward attainment of the NAAQS and CAAQS. **Table 3.3-3** shows the most recent three years of available data. The closest station with data for all six criteria pollutants is the San José station. The data indicate that there were some recent exceedances of the $PM_{2.5}$ and ozone standards.

Table 3.3-3. Air Monitoring Data for 2021-2023, San José (Jackson Street) Monitoring Station

Pollutant	State/Federal Standards	2021		2022		2023	
		No. Exceed[1]	Max Conc	No. Exceed[1]	Max Conc	No. Exceed[1]	Max Conc
PM_{10} 24-hour	50/150 µg/m^3	0/0	45.1 µg/m^3	0/0	44.5 µg/m^3	0/0	NA
$PM_{2.5}$ 24-hour	NA/35 µg/m^3	NA/1	38.1 µg/m^3	NA/2	36.2 µg/m^3	NA/1	49.0 µg/m^3
$PM_{2.5}$ Annual	12.0/9.0 ug/m^3	NA	8.9 µg/m^3	NA	10.1 µg/m^3	NA	8.2 µg/m^3
Ozone 8-hour	0.070 ppm	NA	0.084 ppm	NA	0.074ppm	0/0	0.068 ppm
Ozone 1-hour	0.09 ppm/NA	3/NA	0.098 ppm	0/NA	0.090ppm	0/NA	0.087 ppm
CO 1-hour	20/35 ppm	0/0	1.703 ppm	0/0	1.755 ppm	0/0	1.642 ppm
NO_2 1-hour	0.18/0.1 ppm	0/0	0.048 ppm	0/0	0.047ppm	0/0	0.059 ppm
SO_2 24-hour	0.04 ppm/NA	0/NA	0.001 ppm	0/NA	0.001 ppm	0/NA	0.002 ppm
SO_2 1-hour	NA/0.075 ppm	NA/0	0.002 ppm	NA/0	0.002 ppm	NA/0	0.036 ppm

Notes: CO = carbon monoxide; NO_2 = nitrogen dioxide; $PM_{2.5}$ = particulate matter of 2.5 micrometers or less; PM_{10} = particulate matter of 10 micrometers or less; SO_2 = sulfur dioxide; NA = not available; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter; * = insufficient data available to determine the value.

1. Indicates the number of exceedance days recorded annually at this monitoring station for a particular constituent compared to that constituent's CAAQS and NAAQS, respectively. The first number is the state value and the second number is the federal value if they are different.

Sources: CARB 2024a, 2024b.

Current Stream Maintenance Program (SMP-2) Emissions

Valley Water provided information on equipment and vehicle size and activity for 2023. The emissions from this equipment were estimated using CalEEMod version 2022.1.1.29 (California Air Pollution Control Officers Association [CAPCOA] 2022). Information on pesticide use was also used to estimate ROG emissions from pesticides. **Table 3.3-4** shows the existing SMP-2 criteria air pollutant emissions. Further details on these emission calculations can be found in **Appendix D**, *Air Quality and GHG Emission Calculations*.

Table 3.3-4. Existing (2023) Annual Emissions (tons) of Criteria Air Pollutants

Emissions Source	ROG	NOx	PM_{10}	$PM_{2.5}$
Off-Road & On-Road	3.44	7.24	47.5	5.07
Pesticide Use	4.3	-	-	-
Total	*7.74*	*7.24*	*47.2*	*5.07*

Note: All measurements are in tons per year.
Source: Appendix D.

3.3.4 Impact Analysis

Methodology

The baseline that was used for the air quality analysis is the existing air quality emission levels generated by the current SMP-2 activities. To the extent that new areas have been added for the Program Renewal, as well as the addition of new types of treatments requiring new pieces of equipment, an incremental increase in air emissions would result to potentially new and existing sensitive receptors compared to the existing baseline condition.

Although existing SMP-2 and Program Renewal maintenance activities are, and would be, widespread, transitory, and short-term in nature (similar to construction activities) they serve and would continue to serve the purpose of maintaining existing features rather than constructing new features. Therefore, the Bay Area Air District's operational CEQA thresholds for projects are most appropriate for the Program Renewal.

Air emissions from the Program Renewal maintenance activities were estimated for three sources: offroad vehicles, on-road vehicles, and pesticide use. Off-road equipment and on-road vehicle emissions were estimated using CalEEMod version 2022.1.1.29 (CAPCOA 2022). Two different CalEEmod scenarios were ran which included the baseline SMP-2 activities with the mitigation required from SMP-2 and the Program Renewal activities which in some activities will increase in number of hours of activity. The incremental increase in emissions is based on the difference between the Program Renewal CalEEMod scenario and the SMP-2 CalEEMod scenario. Information on equipment size and activity for 2023 was provided by Valley Water. It was assumed in the EIR analysis for both the SMP-2 and Program Renewal scenarios and in Appendix D that equipment used currently and, in the future, will be Tier 4 final engines[3] for off-road equipment. Valley Water indicated that some of their equipment in

[3] Tier 4 final emissions standards are the final stage of EPA regulations for diesel engine emissions. The regulations aim to reduce harmful emissions like particulate matter and nitrogen oxides. The CalEEMod input listed the existing equipment as Tier 4 final emissions and unmitigated since this is the existing condition as indicated by the equipment information provided by Valley Water and currently used for SMP activities.

the past used liquefied petroleum gas (LPG). LPG was not incorporated into the analysis since the CalEEMod air emissions model does not include default emission factors for these pieces of equipment; instead, equipment using LPG was treated as being diesel equipment which results in a conservative estimate. For the Program Renewal, based on the change from existing miles treated for a 7-year period of time to the Program Renewal's miles treated for a 10-year time period, a factor of 1.29 was used to scale up the activity of the equipment and vehicles unless other activity information for the future was provided by Valley Water. Details of the equipment and usage are available in Appendix D.

Pesticide use was based on the projected amounts listed in Table 2-2 in Chapter 2, *Project Description,* and the percentage of ROG in each pesticide, as identified in the California Department of Pesticide Regulation's (CDPR's) Pesticide Volatile Organic Compound Emission Inventory (CDPR 2025). For a list of the type and quantity of pesticides used under the existing SMP, refer to Table 3.8-2 in Section 3.8, "Hazards and Hazardous Materials."

The existing SMP-2 emissions are subtracted from the anticipated Program Renewal emissions to provide the incremental change in emissions from baseline. The incremental change from the existing baseline conditions is used to make a comparison to the CEQA significance thresholds.

Criteria for Determining Significance

For the purposes of this analysis, the Program Renewal would result in a significant impact on air quality if it would:

A. Conflict with or obstruct implementation of applicable air quality plans;

B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

C. Expose sensitive receptors to substantial pollutant concentrations; or

D. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Table 3.3-5 provides the Bay Area Air District's recommended significance criteria for analysis of air quality impacts.

Emissions associated with the Program Renewal were estimated for the various SMP activities as a whole; for this reason, the impact discussion in this section relative to Significance Criteria A through D is not broken down by the individual categories of maintenance activities. The CO threshold was not evaluated as the traffic volumes are below the screening criteria cited in the Bay Area Air District's CEQA guidance, and the Program Renewal activities are not anticipated to result in an exceedance of the CO ambient air quality standards. Odor complaints are not relevant as Program Renewal activities do not produce long term odors and therefore are not expected to have a complaint history.

Table 3.3-5. Bay Area Air District CEQA Thresholds of Significance for Criteria Air Pollutants

Criteria Air Pollutants and Precursors (Regional)	Operational Emission Thresholds
Reactive Organic Gases (ROG)	Average daily: 54 lb/day Maximum annual: 10 tpy
Nitrogen Oxides (NOx)	Average daily: 54 lb/day Maximum annual: 10 tpy
Particulate Matter (PM_{10})	Average daily: 82 lb/day Maximum annual: 15 tpy
Particulate Matter ($PM_{2.5}$)	Average daily: 54 lb/day Maximum annual: 10 tpy
PM_{10}/$PM_{2.5}$ (fugitive dust)	None
Local Carbon Monoxide (CO)	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)
Local Risks and Hazards	**Threshold**
Risk and Hazards for new sources and receptors (Individual Project)	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.3 µg/m^3 annual average
Risk and Hazards for new sources and receptors (Cumulative Threshold)	Compliance with Qualified Community Risk Reduction Plan OR Cancer risk: >100 million (from all local sources) Non-cancer risk: > 10.0 Hazard Index (from all local sources, Chronic) Ambient $PM_{2.5}$: > 0.8 µg/m^3 annual average (from all local sources)
Accidental Release of Acutely Hazardous Air Pollutants	**Threshold**
Accidental Release of Acutely Hazardous Air Pollutants	Storage or use of acutely hazardous materials located near receptors or new receptors located near stored or used acutely hazardous materials considered significant
Odors	**Threshold**
Odors	Five confirmed complaints per year averaged over 3 years

Notes: CO = carbon monoxide; lb/day = pounds per day; NOx= nitrogen oxide; PM2.5 = particulate matter of 2.5 micrometers or less; PM10 = particulate matter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases; tpy = tons per year

Source: BAAQMD 2023

Environmental Impacts

Impact AIR-1: Conflict with or Obstruct Implementation of Applicable Air Quality Plans (Less than Significant)

The Program Renewal is consistent with local general plan policies applicable to air quality which are outlined in Appendix C. Many of these local general plans aim to reduce emissions of criteria pollutant and toxics by using efficient vehicles and equipment as well as by managing fugitive dust emissions. Many of the general plans reference consistency with Bay Area Air District plans and policies for air quality.

The applicable air quality plan is the Bay Area Air District's 2017 Bay Area Clean Air Plan. Consistency with the 2017 Bay Area Clean Air Plan can be determined if the Program Renewal supports the goals of the plan, includes applicable control measures from the plan, and would not disrupt or hinder implementation of any control measures from the plan.

The goals of the 2017 Bay Area Clean Air Plan are to protect air quality and health at the regional and local scale and protect the climate. To meet these goals, the 2017 Bay Area Clean Air Plan recommends specific control measures and actions to reduce emissions and decrease concentrations of harmful air pollutants. To this end, the 2017 Bay Area Clean Air Plan includes 85 control measures aimed at reducing air pollutants in the air basin (BAAQMD 2017a). These control measures are grouped into various categories: stationary source sector, transportation sector, buildings sector, energy sector, agriculture sector, natural and working lands sector, waste sector, and water sector. Only those sectors relevant to the Program Renewal are discussed in this section.

The control measures identified in the 2017 Bay Area Clean Air Plan that are most applicable to the Program Renewal are associated with the energy and transportation sectors. The Program Renewal would comply with all applicable regulations to reduce energy consumption and reduce fossil fuel combustion. Transportation sector control measures that would be incorporated into the Program Renewal include using Tier 4 equipment and using efficient transportation alternatives such as continued expansion of Valley Water's existing alternative fueled vehicles. Currently, Valley Water's alternative fueled vehicles consist of 15 percent hybrid vehicles and 2 percent electric vehicles compared to the total vehicle fleet (Lewis, pers. comm., 2024). Therefore, the Program Renewal would include applicable control measures identified in the 2017 Bay Area Clean Air Plan and would support the primary goals of the 2017 Bay Area Clean Air Plan.

The Program Renewal is consistent with the local plans and policies discussed in Appendix C.

Since the Program Renewal is consistent with regional and local air quality plans and policies, this impact is less than significant.

Applicable Best Management Practices

None of the best management practices (BMPs) described in Chapter 2, *Project Description,* would affect Valley Water's ability to be consistent with local plans and policies.

Conclusion

Since the Program Renewal is consistent with regional and local air quality plans and policies, this impact is **less than significant**.

Mitigation Measures: No mitigation is required.

Impact AIR-2: Temporary Increase in ROG, NOx, PM_{10}, and $PM_{2.5}$ Emissions during Maintenance Activities (Less than Significant)

Conducting the Program Renewal maintenance activities would generate emissions of criteria air pollutants. In particular, soil disturbance would cause temporary emissions of particulate matter. Fuel combustion involved with operating heavy equipment and on-road

vehicles used to dispose debris also would release particulate matter and other contaminants associated with motor vehicle operation, including carbon monoxide and ozone precursors (ROG and NOx). CO emissions are not quantified because based on BAAQMD screening procedures, the program-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, or 24,000 vehicles per hour, where vertical and/or horizontal mixing is substantially limited. Finally, use of pesticides would result in emissions of ROG.

This analysis considers emissions from both existing SMP-2 activities (which are used as the existing conditions baseline) and additional emissions resulting from implementation of the Program Renewal. **Table 3.3-6** summarizes annual emissions estimates for the existing SMP-2 activities and the Program Renewal. Annual emissions in tons are equivalent to average daily emissions in pounds per day when divided by the number of days in a year and convert tons to pounds. For additional information on how emissions were estimated, refer to Appendix D.

Although daily vehicle activity is anticipated to change to include up to 55 more daily roundtrips than SMP-2, emissions from on-road vehicles are anticipated to decrease due to decreased emission factors as fleets turnover and are replaced with newer vehicles that are less polluting and/or are alternatively fueled. There is anticipated to be an increase in off-road equipment use and a slight increase in vegetation management activities. Annual emissions from the Program Renewal compared to the existing SMP would increase in correspondence to the increase in the number of miles estimated to be covered, which was assumed to be a factor of 1.29. This increase is offset by the decrease in emissions associated with fleet equipment turnover.

Table 3.3-6. Estimated Annual Emissions of Criteria Air Pollutants

Emissions Source	ROG – Existing/Proposed	NOx – Existing/Proposed	PM_{10} – Existing/Proposed	$PM_{2.5}$ – Existing/Proposed
Off-Road & On-Road	3.44/4.06	7.24/8.60	47.2/47.6	5.07/5.13
Pesticide Use	4.3/4.3	–/–	–/	–/
Total	*7.74/8.36*	*7.24/8.6*	*47.2/47.6*	*5.07/5.13*
Incremental Increase	0.62	1.36	0.04	0.06
Bay Area Air District Threshold	10	10	15	10

Notes: All measurements are in tons per year.
NOx = nitrogen oxides; PM2.5 = particulate matter less than 2.5 microns in diameter; PM10 = particulate matter less than 10 microns in diameter; ROG = reactive organic gases
Average daily emission thresholds are equivalent to the annual threshold in tons per year.
Source: Data compiled by Montrose Environmental in 2024; see Appendix D.

Table 3.3-6 shows that annual emissions of criteria air pollutants from SMP-3 would be below the Bay Area Air District operational significance thresholds when compared to existing emissions. Based on this information, average daily emissions would similarly be below Bay Area Air District operational significance thresholds. The continued use of Tier 4 final engines as well as inclusion of alternative fueled equipment will reduce these NOx emissions over time. The PM_{10} emissions are driven by fugitive dust emissions from driving on unpaved

roads and disturbances of dirt. Implementation of BMPs for fugitive dust will minimize impacts from PM_{10} emissions. Since emissions are below the Bay Area Air District significance thresholds, the impact is less than significant.

These criteria air pollutant emissions could lead to increased concentrations of pollutants in the atmosphere and could result in health effects due to the increased emissions. TAC emissions that could affect human health are evaluated separately in Impact AIR-3 below. The ambient concentration of criteria pollutants is a result of complex atmospheric chemistry. Photochemical grid-based models simulate the chemical interactions and three-dimensional dispersion patterns on a regional, statewide, and national scale. These models are complex and require significant expertise, knowledge, and resources as they build on other third-party models and processing tools that characterize meteorology, emissions, and other environmental conditions, such as land cover, radiative properties, and boundary conditions. Use of these models is typically beyond the resources available for air quality analysis prepared pursuant to CEQA, and even if such an analysis was to be completed consideration would need be given to ensure the results would be meaningful based on modeling and data limitations This information is not widely available and, where it is available, its use to predict localized ozone standards violations and health effects would be speculative.

NOx and ROG are precursors to ozone, and NOx, ROG, and sulfur oxides (SOx) are precursors to secondarily formed $PM_{2.5}$. Chemical and physical processes transform some of these precursors to the criteria pollutant concentrations in the atmosphere. Multiple variables determine whether emissions of air pollutants from the Program Renewal move and disperse in the atmosphere in a manner in which concentrations of criteria pollutants would become elevated and result in health impacts. A specific mass of precursor emissions does not equate to an equivalent concentration of the resultant ozone or secondary particulate matter in that area. The resulting health effects of ambient air concentrations are further based on a complex relationship of multiple variables and factors. The calculated health effects are dependent upon the concentrations of pollutants to which the receptors are exposed the number and type of exposure pathways for a receptor, and the intake parameters from a receptor, which vary based upon age and sensitivity (e.g., presence of pre-existing conditions). Health effects would be more likely for individuals with greater susceptibility to exposure, and the location of receptors relative to the Program Renewal impacts would affect where the receptors are exposed to Program Renewal-related pollutants.

Health effects of ozone and criteria air pollutants are discussed in Section 3.3.3, "Environmental Setting." The following is a summary of the health effects from ozone, $PM_{2.5}$ and PM_{10}. Meteorology and terrain play major roles in ozone formation, and conditions for maximum ozone generation occur on days with low wind speeds or stagnant air, warm temperature, and cloudless skies. Short-term exposure (lasting a few hours) to ozone at levels typically observed in the SFBAAB can result in health effects. When inhaled, $PM_{2.5}$ and PM_{10} can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks and cause or aggravate bronchitis and other lung diseases. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper in the lungs and damage lung tissues. Health effects of $PM_{2.5}$ include mortality (all causes), hospital admissions (respiratory, asthma, cardiovascular), emergency room visits (asthma), and acute myocardial infraction (non-fatal). For ozone, the endpoints are mortality, emergency room visits (respiratory), and hospital admissions (respiratory).

Applicable Best Management Practices

The BMPs summarized below would be implemented to control dust emissions, equipment exhaust emissions, and pesticide drift emissions during the Program Renewal maintenance activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-2**: **Instream Herbicide Application** will ensure that proper protocols are followed for the application of instream herbicide. Application of herbicides will not occur when wind speeds exceed 10 miles per hour, which will minimize the exposure of emissions from toxic air pollutants. Restrictions will also be applied on herbicide ingredients that are subject to the special-status species injunctions.

- **BMP GEN-4**: **Minimize the Area of Disturbance** will ensure that the footprint of work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of fugitive dust and therefore reduce the amount of PM_{10} emissions.

- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize the amount of fugitive dust.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to keep spoils and chemicals in designated areas which will help to minimize fugitive dust and emissions from entering sensitive areas.

- **BMP GEN-36: Dust Management** will ensure that the Bay Area Air District's Basic Dust Control Measures are implemented.

- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that criteria air pollutant emissions are reduced.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

- **BMP HM-4: Posting and Notification for Pesticide Use** will provide notice of where pesticides will be used to minimize the exposure of toxic air pollutants to sensitive receptors.

Conclusion

Emissions of criteria air pollutants from the Program Renewal would be below the Bay Area Air District significance thresholds. While not required as air quality mitigation, **Mitigation Measure GHG-2, GHG Emissions Management Practices for Off-road Equipment and Vehicles**, which establishes requirements for zero emission and hybrid equipment and

newer trucks, would further reduce criteria pollutant emissions from equipment and trucks. Therefore, the impact is **less than significant,** and no mitigation is required.

Mitigation Measures: No mitigation is required.

Impact AIR-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations (Diesel PM and Pesticides) during Maintenance Activities (Less than Significant)

Exhaust emissions from on- and off-road vehicles and equipment (e.g., generators, excavators, dozers, rollers, cranes, loaders, and trucks) used for maintenance under the Program Renewal would generate diesel PM, which is a toxic air contaminant. Individual maintenance activities would last from one day to several weeks. These maintenance activities would be countywide, transitory, and intermittent; when they have ceased, associated diesel PM emissions will have ceased as well. CARB's ATCM measures that are applicable to the Program Renewal would reduce exposure to TACs.

Health risk assessments for diesel PM are typically based on 9-, 40-, and 70-year exposure periods since they have chronic long-term health impacts, including cancer. Because of the short-term and highly variable nature of diesel PM emissions associated with the Program Renewal, exposure to diesel exhaust, including for sensitive receptors, would be well below the exposure period of concern. For this reason, Bay Area Air District significance thresholds for TAC health risks are not used in this analysis.

The use of pesticides and herbicides during maintenance activities could release air toxics into the air. The highest risk is for those sensitive receptors located downwind of the pesticide application. Regulations for application of pesticides were developed to reduce the extent of exposure to air toxics during pesticide applications.

The exposure to pesticide use is greatest during application that may cause acute short term health effects such as respiratory problems, watery eyes, and irritated skin. Prolonged use of pesticides may result in chronic long-term health impacts, including cancer. Existing pesticide regulations minimize the chances of acute exposure and limit the amount of long-term pesticide use in the environment.

Applicable Best Management Practices

The BMPs summarized below would be implemented to help minimize SMP-3 diesel PM and pesticide emissions. Full descriptions of these BMPs are provided in Chapter 2, *Project Description,* **Table 2-10**.

- **BMP GEN-2: Instream Herbicide Application** will ensure that proper protocols are followed for the application of instream herbicide. Herbicides will not be applied directly into the water, and the application of herbicides will not occur when wind speeds exceed 10 miles per hour, which will minimize the exposure of diesel PM and toxic air contaminants from pesticide emissions. Restrictions will be applied on herbicide ingredients that are subject to the special-status species injunctions.

- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that criteria air pollutant emissions are reduced.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

- **BMP HM-4: Posting and Notification for Pesticide Use** will provide notice of where pesticides will be used to minimize the exposure of air toxics during pesticide applications.

Conclusion

Based on the above analysis, exposure of persons to diesel PM and pesticides concentrations would not be substantial; implementation of BMPs would reduce diesel PM and pesticide exposure. While not required as air quality mitigation, Mitigation Measure GHG-2, which establishes requirements for zero emission and hybrid equipment and newer trucks, would further reduce TAC emissions from diesel particulate matter. Therefore, exposure of persons to DPM and pesticides generated by the Program Renewal would be **less than significant,** and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact AIR-4: Creation of Objectionable Odors (Less than Significant)

Sediment removal is the only activity in the Program Renewal that has the potential to generate substantial objectionable odors.

Sediment Removal

Excavated sediment from stream channels may contain high levels of organic material. Natural decomposition of organic material depletes oxygen in the subsurface environment, leading to anaerobic conditions and the generation of hydrogen sulfide. Subsequently, hydrogen sulfide gas may then be released when sediment is excavated. The potential concentrations of hydrogen sulfide gas released from sediment removal activities would not be substantial enough to adversely affect human health; however, they could cause annoyance by creating an objectionable odor in the vicinity of a specific maintenance/ stockpile work site or reuse/disposal location. The intensity of odor from excavated sediment would depend on the amount and quality of sediment.

The Bay Area Air District indicates that odor impacts could result from siting a new odor source near existing sensitive receptors; however, Valley Water is not aware of instances under the existing SMP when excavated or stockpiled sediment has generated odors that have created an annoyance. Conditions are anticipated to be substantively similar for SMP-3 as they were for SMP-2. Any odors, should they occur, would be localized, short-term, and would not be anticipated to affect a substantial number of people.

Applicable Best Management Practices

None of the BMPs described in Chapter 2, *Project Description,* would address objectionable odors that might be created by the Program Renewal.

Conclusion

Based on the above analysis, the impact from creation of objectionable odors would be **less than significant,** and no mitigation is required.

Mitigation Measures: No mitigation is required.

3.4 Biological Resources

3.4.1 Introduction and Methods

This section describes the terrestrial and aquatic biological resources present in Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) Area, applicable federal and state regulations, potential impacts of the Program Renewal on biological resources, and measures necessary to reduce project impacts on biological resources to less-than-significant levels under the California Environmental Quality Act (CEQA).

This chapter includes four sections: "Introduction and Methods," "Regulatory Setting," "Environmental Setting," and "Impact Analysis." The "Introduction and Methods" section describes methods used to identify biological resources in the Program Renewal Area, including reviews of available Valley Water data. Federal and state regulations that apply to biological resources in the Program Renewal Area are discussed under "Regulatory Setting." "Environmental Setting" provides details on the climate and soils in the Program Renewal Area, natural communities and land cover types and the plant and wildlife species that occur in each community, and invasive and nonnative species and pathogens. In addition, "Environmental Setting" describes special-status species of plants and animals and their potential to occur within the Program Renewal Area and maintenance activity work areas, sensitive natural communities in the Program Renewal Area, and wildlife movement. "Impact Analysis" evaluates whether the Program Renewal impacts on biological resources are significant under CEQA and identifies feasible mitigation measures to reduce impacts to a less-than-significant level, where necessary.

As an example of how this chapter is structured, for the federally threatened California red-legged frog (*Rana draytonii*), "Introduction and Methods" describes reports, literature, and technical databases, as well as Valley Water survey data, that were reviewed to determine the potential presence of this species in the Program Renewal Area. "Regulatory Setting" discusses the Federal Endangered Species Act (FESA), which protects this species. Under "Environmental Setting," natural communities and land cover types potentially supporting red-legged frogs, such as riparian forest and scrub and wetlands, are described, along with associated plant and animal species. Invasive species and pathogens that may have harmful effects on red-legged frogs and their habitats are also described. The potential for California red-legged frogs to occur in the Program Renewal Area and maintenance activity work areas, as well as their distribution, is discussed under "Special-Status Animals." Program Renewal impacts on this species, measures being implemented by the Program Renewal to reduce impacts, and mitigation measures to reduce impacts to less-than-significant levels are addressed under Impact BIO-1J.

To identify biological resources, a number of documents and resources were collected and reviewed, including the Santa Clara Valley Water District (Valley Water) 2027–2036 Stream Maintenance Program Manual (SMP Manual) (Valley Water 2024a); survey data provided by Valley Water (described in detail below); aerial images (Google LLC 2024); U.S. Geological Survey (USGS) topographic maps; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB 2024); the *2019–2023 Stream Maintenance Program Renewal Manual* (Valley Water 2014) and Final Environmental Impact Report (2011); the 2002 Stream Maintenance Program Renewal (Valley Water 2001) and *Final*

Environmental Impact Report for the Multi-Year Stream Maintenance Program Renewal (Valley Water 2002a); the Santa Clara Valley Water District Hazard Tree Program Renewal Biological Resources Report (H. T. Harvey & Associates 2019); habitat and species information from the Santa Clara Valley Habitat Plan (VHP) (ICF International 2012); and other relevant reports, scientific literature, and technical databases.

In addition, for plants, all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, 2B, 3, and 4 lists occurring in the *Palo Alto*, *Mountain View*, *Milpitas*, *Calaveras Reservoir*, *Mindego Hill*, *Cupertino*, *San Jose West*, *San Jose East*, *Lick Observatory*, *Castle Rock Ridge*, *Los Gatos*, *Santa Teresa Hills*, *Morgan Hill*, *Mt. Sizer*, *Mt. Madonna*, *Gilroy*, *Chittenden*, and *San Felipe* USGS 7.5-minute quadrangles in which the Program Renewal Area is located (for CNPS) as well as within the Program Renewal Area vicinity (for CNDDB) were reviewed. CNDDB (2024) was also queried for natural communities of special concern that occur within the Program Renewal Area, and records of birds reported in nearby areas on eBird (Cornell Lab of Ornithology 2024) were reviewed.

Because Program Renewal activities are proposed for VHP inclusion via an amendment expected to be considered for approval in 2026, VHP mapping of land cover types, including mapping of new Santa Clara County areas for the forthcoming VHP amendment, was used to characterize land cover in the Program Renewal Area for the purpose of this assessment. Where VHP mapping was not available (i.e., in tidal areas), biotic habitats were assessed using a combination of available habitat mapping, a review of aerial imagery, and knowledge of conditions by Valley Water and H. T. Harvey biologists, and habitat types were characterized based on *A Manual of California Vegetation* (Sawyer et al. 2009).

For the purpose of this assessment, the *Program Renewal Area* includes all areas of Santa Clara County up to 1,000 feet in elevation. Because Program Renewal activities will be focused along and adjacent to streams, not all portions of the Program Renewal Area will be impacted by Program Renewal activities. The term *Program Renewal work area(s)* is used to refer to areas where Program Renewal activities will actually occur.

Appendices supporting the biological resources chapter are *Appendix A* (*SMP Manual*), *Appendix C* (*General Plan Policies and Ordinances*), *Appendix E* (*Special-Status Plant Species Considered but Rejected), and Appendix F* (*Mitigation Feasibility Assessment Field Protocol.*

Valley Water Survey Data

Valley Water routinely conducts a variety of surveys and monitoring efforts that provide information on the presence and distribution of sensitive communities and plant and animal species, including special-status species and their habitats, in Valley Water's service area. The following is a summary of Valley Water survey data that support this assessment.

Fish Surveys

Valley Water has collected fish species distribution, occurrence, and abundance data for a variety of projects and Program Renewals and conducted several types of fisheries surveys to meet specific information needs and to monitor for impacts. Such surveys have included:

- conducting habitat typing and mapping;
- collecting water quality data such as temperature, dissolved oxygen, and turbidity;

- identifying fish assemblages; at index reaches and in project locations;
- monitoring upmigration and outmigration of Chinook salmon and steelhead;
- collecting and analyzing steelhead eDNA;
- monitoring juvenile steelhead rearing; and,
- collecting data on species presence, disposition, and abundance at relocation sites.

Examples of studies conducted by Valley Water that provide information on fish use of SMP creeks are listed in Table 3.4-1.

Table 3.4-1. Selected Valley Water Fisheries Studies[1]

Title	Year
Santa Clara Valley Water District Upmigrant and Outmigrant Trapping Operations for the Guadalupe River, Coyote Creek, and Stevens Creek	1998–2005
Stream Habitat Summary Report for the Fisheries and Aquatic Habitat Collaborative Effort	2000
Ancient DNA analysis of archaeological specimens extends Chinook salmon's known historic range to San Francisco Bay's tributaries and southernmost watershed	2021
Santa Clara Valley Water District Guadalupe River Project Mitigation Monitoring Report	2000–2010
Fish Relocations for Stream Maintenance Program	2002–2013
Provenance Analysis of Chinook Salmon (*Oncorhynchus tshawytscha*) in the Santa Clara Valley Watershed	2002b
Chinook Radio Tracking Report, Guadalupe River Watershed, 2003-2004	2004
Mid-Coyote Flood Protection Project Baseline Fisheries Monitoring Report Year 1 (2007)	2007
Population Genetics of *Oncorhynchus mykiss* in the Santa Clara Valley Region	2008
Mid-Coyote Creek Flood Protection Project Baseline Fisheries Monitoring Report Year 2 (2008)	2009a
Lenihan Dam Outlet Modifications Project Fisheries Sampling Update, Project No. 91904005	2009b
Masson Fishway 2007-2008 Monitoring Report and Alamitos and Masson Fishway 2003-2008 Summary Report	2009c
Juvenile Steelhead/Trout Index Sampling, Stevens Creek, 2010	2010
Stevens Creek Baseline Fisheries Monitoring 2013 Year 1	2014
Fisheries Conservation and Stewardship Efforts	2015
Water Year 2016 FINAL Mitigation Monitoring Report for the Downtown and Upper Guadalupe River Flood Projects, San Jose, California	2017
Study of Santa Clara County Steelhead Streams to Identify Priority Locations for Gravel Augmentation and Large Woody Debris Placement, Santa Clara County, California	2018
Historical Occurrence of Chinook Salmon (Oncorhynchus tshawytscha) in the Guadalupe River Watershed, Santa Clara County, California	2018a

Title	Year
Multiple Lines of Evidence Report: Mitigation Monitoring Anadromous Fish Occurrence, Adult Migration and Spawning	2018b
Water Year 2017 FINAL Mitigation Monitoring Report for the Downtown and Upper Guadalupe River Flood Projects, San Jose, California	2018
2018 Coyote Creek Watershed Fisheries Monitoring	2019a
Water Year 2018 Exploratory Juvenile *Oncorhynchus mykiss* Sampling in Coyote Creek	2019
2018 Guadalupe River Watershed Fisheries Monitoring	2019b
Fish Assemblage of Anderson Reservoir 2017 and 2019	2020a
2018 and 2019 Fish Assemblage Report for the Guadalupe River Watershed and Stevens Creek Reservoir Mercury Total Maximum Daily Load Monitoring	2020b
Fish Assemblage of Coyote Reservoir 2019	2020c
2019 Coyote Creek Watershed Fisheries Monitoring	2020d
2019 Guadalupe River Watershed Fisheries Monitoring	2020e
Stevens Creek Fish Passage Analysis	2020
2020 Coyote Creek Watershed Fisheries Monitoring	2021a
2020 Guadalupe River Watershed Fisheries Monitoring	2021b
2020 Stevens Creek Fisheries Monitoring	2021c
2021 Coyote Creek Watershed Fisheries Monitoring	2021d
2021 Guadalupe River Watershed Fisheries Monitoring	2022a
2021 Stevens Creek Fisheries Monitoring	2022b
FERC Order Compliance Project: 2022 Coyote Creek Fish Rescue Discussion Coyote Creek Conditions	2022c
2022 Coyote Creek Watershed Fisheries Monitoring	2022d

[1]Citations are provided where available. Uncited references are from unpublished Valley Water studies.

Amphibian and Reptile Surveys

From 2015 to 2022, Valley Water conducted more than 600 surveys for amphibians along or within 73 creeks, channels, wetlands, and basins in the Program Renewal Area, totaling more than 476 miles of survey effort (many surveys were conducted repeatedly in the same locations) (Valley Water, unpublished data). Approximately 396 focused surveys for California red-legged frogs, consisting of paired daytime and nighttime surveys performed in accordance with U.S. Fish and Wildlife Service (USFWS) guidance, were conducted along or within 64 creeks, channels, wetlands, and basins in the Program Renewal Area during this period, representing 318 miles of survey effort. Single adult California red-legged frogs were detected along Llagas Creek at Rucker Avenue in Gilroy in 2016 (this record is unconfirmed), along Berryessa Creek at Piedmont Road in San Jose in 2017, and along Uvas Carnadero Creek south of State Route 25 in 2017. Approximately 422 focused surveys for California tiger salamanders (*Ambystoma californiense*), also consisting of paired daytime and nighttime surveys performed in accordance with USFWS guidance, were conducted along or within 63 creeks, channels, wetlands, and basins in the Program Renewal Area during this period, representing 349 miles of survey effort. No California tiger salamanders were detected during the surveys.

Northwestern pond turtles (*Actinemys marmorata*) (now identified by USFWS as the northwestern pond turtle, and referred to as "northwestern pond turtle" throughout the rest of this chapter) have also been detected by Valley Water during the period from 2016 to 2021 along Lower Silver Creek near Lake Cunningham, along Guadalupe Creek adjacent to the Los Capitancillos Ponds, along Llagas Creek south of State Route 152 in Gilroy, below the Calero Reservoir main dam, along Randol Creek near Cathedral Park, along Coyote Creek below Coyote Dam, along the Guadalupe River at Highway 85, and along Los Gatos Creek at Creekside Way.

Bird Surveys

From 2016 to 2022, Valley Water conducted 42 surveys for least Bell's vireos (*Vireo bellii pusillus*) along Jones Creek, Llagas Creek, the Pajaro River, Tar Creek, Tick Creek, Uvas Carnadero Creek, and Uvas Creek within the Program Renewal Area. No least Bell's vireos were detected during the surveys (Valley Water, unpublished data).

In addition, Valley Water has conducted numerous surveys for nesting birds in support of work activities throughout the Program Renewal Area, as well as year-round surveys for burrowing owls (*Athene cunicularia*) within portions of the Program Renewal Area that provide suitable habitat. These surveys have detected nonbreeding burrowing owls along the Guadalupe River at the Gold Street Bridge in December 2017, and along Coyote Creek at McCarthy Boulevard in October 2020. Valley Water biologists have also conducted surveys for other special-status bird species, such as Swainson's hawk (*Buteo swainsoni*) and California Ridgway's rail (*Rallus obsoletus obsoletus*) (Valley Water, unpublished data).

3.4.2 Regulatory Setting

A number of federal, state, and local laws and ordinances regulate biological resources within the Program Renewal Area. Federal and state regulations that pertain to biological resources are summarized below along with their applicability to Program Renewal activities. Applicable local plans, policies, and regulations laws and ordinances are described in detail in *Appendix C*, *General Plan Policies and Ordinances.* In summary, *Appendix C* discusses several plans throughout Santa Clara County and local jurisdictions that contain relevant programs, strategies, policies and goals to protect habitats and natural areas, special-status plant and wildlife species, and to encourage restoration of stream channels and riparian areas. The plans also contain policies and strategies for protecting trees and maintaining water quality. A discussion on the Santa Clara Valley Habitat Plan and a list of the tree ordinances/regulations are described below due to the relevancy they have to the analysis.

Federal Plans, Policies, Regulations, and Laws

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections of the CWA that pertain to biological resource regulation are Sections 303, 401, 402, and 404 (discussed hereunder).

Section 401, Water Quality Certification

Under CWA Section 401, applicants seeking a federal license or permit to conduct activities that may result in the discharge of dredged and fill materials into surface waters of the U.S. (including wetlands) must obtain Section 401 Water Quality Certification so that any such discharge will comply with the applicable provisions of the CWA, including Sections 301, 302, 303, 306, and 307, and state water quality standards. Section 401 Water Quality Certification is approved by the state in which the discharge will originate; or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge will originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit) also must comply with CWA Section 401. The goal of CWA Section 401 is to include evaluation of water quality when considering activities associated with placement of fill materials into waters of the U.S.

Program Renewal Applicability. As described under the CWA above, any work within waters of the U.S. (i.e., wetlands and other waters) may require a Section 404 fill discharge permit from the U.S. Army Corps of Engineers (USACE) and Section 401 Water Quality Certification and/or a Waste Discharge Requirement from the relevant Regional Water Quality Control Board (RWQCB). Tidal salt marsh, tidal brackish marsh, most freshwater wetlands, and open water habitats (e.g., large waterways, small perennial and intermittent drainages, and wetlands) in the Program Renewal Area generally are considered waters of the U.S., subject to the jurisdiction of the USACE and RWQCB.

Section 404

Section 404 of the Clean Water Act (CWA) prohibits the discharge of dredged and fill materials into waters of the United States (U.S.), including wetlands, without prior USACE authorization. "Discharge of dredged material" and "discharge of fill material" are defined in Title 33, Section 323.2 of the Code of Federal Regulations (33 CFR Section 323.2). "Waters of the United States," including "wetlands," are defined in 33 CFR Section 328.3. On March 24, 2025, the USACE and U.S. Environmental Protection Agency issued a proposed rule indicating that they would engage with State and Tribal regulatory, industry and agricultural stakeholders, environmental and conservation stakeholders, and the public regarding concerns and questions those stakeholders might have regarding the definition of "waters of the U.S."

A May 25, 2023 U.S. Supreme Court decision in *Sackett v. Environmental Protection Agency* limited the definition of jurisdictional wetlands that are considered waters of the U.S. to those wetlands having a continuous surface connection with traditional navigable waters or their tributaries. On August 29, 2023, the U.S. Environmental Protection Agency and USACE issued a final implementing rule to amend the definition of waters of the U.S. to conform with the *Sackett* decision, which was implemented in September 2023. (33 CFR 328.3; 40 CFR 120.2.) On March 24, 2025, the agencies issued a solicitation for public comments to further amend the definition of waters of the United States (90 Fed. Reg. 13428.)

Program Renewal Applicability. Wetland and aquatic habitats likely to be determined to be waters of the U.S. by the USACE are present throughout the Program Renewal Area, and Program Renewal activities will occur within these habitats. Any work within waters of the U.S. (i.e., wetlands and other waters), including relatively large waterways, small perennial and intermittent drainages, tidal salt marshes, tidal brackish marshes, most freshwater

wetlands, and open water habitats may require a Section 404 fill discharge permit from the USACE. Valley Water will apply for a Section 404 permit to support the Program Renewal.

Section 402, National Pollutant Discharge Elimination System

Section 402 of the CWA regulates the discharges of pollutants to waters of the U.S. to limit water quality impacts. Under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), the State Water Resources Control Board (SWRCB) and the nine regional boards have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits for certain point-source and non-point discharges to waters.

Program Renewal Applicability. Various NPDES permits apply to Santa Clara County and to Valley Water. The Municipal Regional Stormwater NPDES permit (Order R2-2009-0074, NPDES Permit No. CAS612008) (MRP) covers municipal stormwater discharges from the majority of Bay Area counties and cities. The SWRCB adopted the Statewide General NPDES Permit for the Regulation of Residual Aquatic Pesticide Discharges to Waters of the U.S. from Algae and Aquatic Weed Control Applications (Water Quality Order 2013-002-DWQ, General Permit # CAG990005). Construction-related stormwater discharges to waters of the U.S. are regulated under the SWRCB's General Permit for Discharges of Storm Water Associated with Construction and Land Disturbance Activities (Construction General Permit) (2022). The Program Renewal will continue to comply with the applicable requirements detailed in the NPDES permits including water quality monitoring and herbicide toxicity control.

Section 303

Under CWA Section 303(d), states are required to identify "impaired water bodies" (those that do not meet established water quality standards), identify the pollutants causing impairment; establish priority rankings for waters on the list; and develop a schedule for development of control plans to improve water quality. Each RWQCB must update the Section 303(d) list every two years. The water bodies on the list have no further assimilative capacity for the identified pollutant, and the Section 303(d) list identifies priorities to develop pollution control plans for each listed water body and pollutant. The pollution control plans triggered by the CWA Section 303(d) List are total maximum daily loads. CWA Section 303 is overseen by the U.S. Environmental Protection Agency (USEPA) and is administered by the SWRCB and its nine RWQCBs. Once a total maximum daily load is developed and approved by the U.S. Environmental Protection Agency, the SWRCB, and the relevant RWQCB, the implementation plan (if included in the total maximum daily load) can be enacted.

Additional details are provided in Chapter 3.14, "Water Quality."

Program Renewal Applicability. The Program Renewal will continue to comply with the requirements detailed in adopted total maximum daily loads, including water quality monitoring and pollutant control. Total maximum daily loads for the Guadalupe River (mercury), San Francisco Bay (mercury and polychlorinated biphenyls), urban creeks (pesticides), the Pajaro River (fecal coliforms, sediment, nutrients, and chlorpyrifos and diazinon) in the Program Renewal Area are detailed under "State Plans, Policies, Regulations, and Laws" in Chapter 3.14, "Water Quality."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 prohibits obstruction or alteration of navigable waters of the U.S. without prior USACE authorization. Within the Program Renewal Area, Section 10 jurisdictional waters include all tidally influenced portions (up to the mean high water line) of Guadalupe, Coyote and Alviso Sloughs; as well as the lower reaches of Permanente, Stevens, San Tomas Aquino, Calabazas, San Francisquito, Coyote, and Lower Penitencia Creeks, the Sunnyvale East and West Channels, and the Guadalupe River.

Program Renewal Applicability. Program Renewal activities conducted within or over the tidally influenced portions of Guadalupe, Coyote, and Alviso Sloughs and/or the lower reaches of Permanente, Stevens, San Tomas Aquino, Calabazas, San Francisquito, Coyote, and Lower Penitencia Creeks, the Sunnyvale East and West Channels, and the Guadalupe River, are authorized under the Program Renewal's Regional General Permit (RGP) under the authority of CWA Section 404.

Regional General Permit

The USACE issued an RGP for the Program (File No. SPN-1996-225250S), under the authority of CWA Section 404 (33 U.S. Code [USC] Section 1344) and the Rivers and Harbors Act of 1899 Section 10 (33 USC Section 403) in 2014. The existing RGP was valid for five years from the date of issuance, was then renewed for another five years through 2023, and then extended for an additional three years through 2026. The USACE may either issue an amended RGP or a new RGP for the Program Renewal. Compliance with additional federal regulations will be required by the USACE prior to issuance of a new or amended RGP.

Federal Endangered Species Act – Section 7

FESA was enacted in 1973 to protect plant and wildlife species that have been determined by the USFWS or National Marine Fisheries Service (NMFS) to be at risk of extinction. FESA Section 9 prohibits the take of any fish or wildlife species listed under the FESA as endangered. Take of threatened species under FESA Section 9 is also prohibited, unless otherwise authorized by federal regulations. "Take," as defined by the FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" is defined as "any act that kills or injures the species, including significant habitat modification." In addition, FESA Section 9 prohibits the "removal or reduction to possession" of any listed plant species "under federal jurisdiction" (i.e., on federal land).

Program Renewal Applicability. Program Renewal maintenance activities may affect a number of federally listed, proposed, and candidate animal species, including the monarch butterfly (*Danaus plexippus*), San Francisco Bay-Delta longfin smelt (*Spirinchus thaleichthys*), southern green sturgeon (*Acipenser medirostris*), Central California Coast (CCC) and South-Central California Coast (SCCC) steelhead (*Oncorhynchus mykiss*), California tiger salamander, California red-legged frog, foothill yellow-legged frog (*Rana boylii*), northwestern pond turtle, California Ridgway's rail, western snowy plover (*Charadrius nivosus nivosus*), least Bell's vireo, salt marsh harvest mouse (*Reithrodontomys raviventris*), and San Joaquin kit fox (*Vulpes macrotis mutica*). The California condor (*Gymnogyps californianus*) and California least tern (*Sternula antillarum browni*) are expected to occur in the Program Renewal Area only as nonbreeding foragers, and no impacts due to Program Renewal activities on these

species are anticipated. No federally listed plant species occur within Program Renewal work areas.

Take of most of these species will be avoided, either because Program Renewal activities will not occur in locations where take can occur, or because implementation of best management practices (BMPs) would avoid take. Following coverage of the Program Renewal under the forthcoming VHP amendment, if Program Renewal activities occur in areas where BMPs may not be adequate to avoid take (e.g., for species that are difficult to detect, such as the California tiger salamander), incidental take approval for VHP-covered federally listed species will be provided via the VHP for VHP-covered activities and species. Where take of federally listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) establishes a national Program Renewal to manage and conserve commercial fisheries of the U.S. through the development of federal Fishery Management Plans (FMPs), and the federal regulation of domestic fisheries under those FMPs, within the 200-mile U.S. Exclusive Economic Zone (16 USC Section 1801 et seq.). Essential Fish Habitat (EFH) is designated for commercially fished species under the MSA. Congress defined EFH for federally managed fish species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The MSA requires federal FMPs developed by NMFS and the Pacific Southwest Fisheries Management Council to describe the habitat essential to the fish being managed and to describe threats to that habitat from both fishing and non-fishing activities. Pursuant to section 305(b) of the MSA (16 U.S.C. 1855[b]), federal agencies are required to consult with NMFS on actions that may adversely affect EFH for species managed under the FMPs. When NMFS concludes that an action may adversely affect EFH, NMFS is required to provide the action agency with conservation recommendations to protect EFH.

Program Renewal Applicability. Program Renewal maintenance activities in tidal waters and in Coyote Creek may affect EFH. The only fish species subject to a fisheries management plan that occurs in the Program Renewal Area with any regularity is the Chinook salmon (*Oncorhynchus tshawytscha*), which is regulated by the Pacific Fishery Management Council's Salmon FMP. Both Coyote Creek and the San Francisco Bay are officially listed as EFH for this species (Pacific Fishery Management Council 2024a), and Chinook salmon also occur in Los Gatos Creek and the Guadalupe River. Although Chinook salmon currently occurring in the Program Renewal Area have been recognized as strays from hatchery releases (NMFS 1999, Garcia-Rossi and Hedgecock 2002, Valley Water 2018), NMFS still considers habitat used by Chinook salmon in the South Bay as EFH.

Portions of watersheds upstream of the south San Francisco Bay such as Coyote Creek, the Guadalupe River, Permanente Creek, Baron Creek, and Matadero Creek are listed as EFH for the CCC coho salmon (*Oncorhynchus kisutch*). The species was anecdotally reported to occur in Coyote Creek historically, and possibly in the Guadalupe River (Skinner 1962 as cited in Leidy et al. 2005). However, it is unclear whether the species was ever actually present, as the life history of coho salmon is not conducive to its existence in South San Francisco Bay streams under either historical or current conditions. If the species was ever present, it has

been extirpated from these areas (Brown and Moyle 1991, Leidy et al. 2005, Spence et al. 2005). However, NMFS still considers habitat used by Coho salmon in the South Bay as EFH.

A number of fish species regulated by the Coastal Pelagics and Pacific Groundfish FMPs, such as the leopard shark (*Triakis semifasciata)*, English sole (*Parophrys vetulus)*, starry flounder (*Platichthys stellatus*), and big skate (*Raja binoculata*), occur in the tidal habitats of South San Francisco Bay and occasionally disperse upstream into the reaches of Alviso Slough, Coyote Slough, San Francisquito Creek, San Tomas Aquino Creek, and other tidal creeks in the Program Renewal Area (Otolith Geochemistry & Fish Ecology Laboratory 2023). Species such as the northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), and jack mackerel (*Trachurus symmetricus*) also occur in the South Bay; these species are less likely to occur in the uppermost tidal reaches of sloughs where Program Renewal activities would occur, but small numbers could occur there (Otolith Geochemistry & Fish Ecology Laboratory 2023). Thus, the NMFS may consider these tidal waters to be EFH as well.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC Section 703), administered by the USFWS, implements four treaties between the U.S. and Canada, Mexico, Japan, and Russia to manage and conserve migratory birds that cross national borders. The MBTA prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests, and prohibits the possession of all nests of protected bird species whether they are active[1] or inactive. Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction. "Take" includes most actions, direct and indirect, that can result in take or possession, whether it is temporary or permanent, of any protected species. Although harassment and habitat modification are not identified as take under the MBTA or the California Fish and Game Code (F&G Code); such actions that result in the direct loss of birds, nests, or eggs, including nest abandonment or failure, are considered take under such regulations.

Program Renewal Applicability. All native bird species that occur in the Program Renewal Area are protected under the MBTA except for the California quail (*Callipepla californica*), which is among the groups explicitly exempted from MBTA protection.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (16 USC Sec. 668 et seq.) protects eagles from commercial exploitation and safeguards their continued survival in the U.S. This law provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds, or their parts, products, nests, or eggs. The USFWS, which enforces the Bald and Golden Eagle Protection Act, can issue permits for the take of eagles under limited circumstances (e.g., for scientific and exhibition use or for traditional and cultural use by Native Americans).

Program Renewal Applicability. Although both bald eagles and golden eagles could nest in the Program Renewal Area, take of these species due to Program Renewal activities will be

[1] An active nest is defined as having eggs or young, as described in the USFWS' June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents."

avoided through the implementation of BMPs. Thus, no Bald and Golden Eagle Protection Act incidental take permit from the USFWS will be necessary.

Marine Mammal Protection Act

The Marine Mammal Protection Act prohibits the take of marine mammals, with certain exceptions, in waters under the jurisdiction of the U.S. or by citizens of the U.S. on the high seas, as well as the importation of marine mammals and marine mammal products into the U.S. Take is defined as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." Harassment is defined as "any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering."

Program Renewal Applicability. Small numbers of Pacific harbor seals (*Phoca vitulina richardsi*), which are protected under the Marine Mammal Protection Act, are known to occur in the lower reaches of sloughs in the Program Renewal Area.

State Plans, Policies, Regulations, and Laws

California Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) was enacted in 1969, and together with the federal CWA, provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a Regional Water Quality Control Board (RWQCB). The Porter-Cologne Act established regulatory authority over "waters of the state," which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Division 7, Section 13050). More specifically, the SWRCB and its nine RWQCBs have jurisdiction over the bed and banks of a stream channel, its riparian corridor, and its beneficial uses.

Program Renewal Applicability. All wetlands and other waters regulated by the USACE under Section 404 of the CWA would also be considered waters of the state by the RWQCB. In addition, the waters of the state would include some wetlands and other waters that are not regulated by USACE, particularly in the wake of *Sackett v. Environmental Protection Agency*, such as wetlands that lack a continuous surface connection to navigable waters. The RWQCB also claims jurisdiction over streams up to top of bank, or to the outer edge of the canopy of riparian trees and shrubs rooted below top of bank, whichever extends farther landward.

Waters of the state are present throughout the Program Renewal Area, and maintenance activities will occur within waters of the state. Any maintenance activities that impact waters of the state would necessitate 401 water quality certification (if a 404 permit from the USACE were needed) and/or a Waste Discharge Requirement from the RWQCB.

Keene-Nejedly California Wetlands Preservation Act

The Keene-Nejedly California Wetlands Preservation Act (AB 2875) was enacted in 2024 to ensure no net loss and long-term gain in the quantity, quality, and permanence of wetlands

(i.e., waters of the state protected under the Porter-Cologne Act) acreage and values in California.

Program Renewal Applicability. To be consistent with this policy, any wetlands considered waters of the state by the RWQCB that may be lost as part of the Program Renewal would need to be replaced at a ratio equal to or greater than 1:1 (impact: mitigation).

Applicability. The Program Renewal will continue to comply with the requirements detailed in adopted total maximum daily loads, Municipal Regional Stormwater NPDES Permit.

As part of the NPDES, municipalities are required to maintain NPDES permits for their stormwater discharges. The municipalities, in turn, require that individual projects within their jurisdiction comply with the requirements of these permits. The MRP (Order R2-2009-0074, NPDES Permit No. CAS612008) covers municipal stormwater discharges from the majority of Bay Area counties and cities.

Program Renewal Applicability. Valley Water complies with the MRP, which mandates that pesticides (in the case of the Program Renewal, specifically herbicides) be used only when other methods such as mulching, mechanical weed abatement, hand pulling/weed abatement, and grazing have proven impracticable. When pesticides are used, the least toxic products that will meet the need are used at the lowest effective rate. All herbicide applicators are required to obtain a Qualified Applicator Certificate or Qualified Applicator License from the California Department of Pesticide Regulation. Valley Water continually works to minimize pesticide use as much as practical. Valley Water's pesticide use is reviewed regularly as part of the compliance effort with the MRP and is consistent with California Department of Pesticide Regulation requirements and court orders for threatened and endangered species, as stipulated by a 2004 United States District Court order, for certain pesticides applied near salmon-supporting waters (see http://www.cdpr.ca.gov/docs/endspec/salmonid.htm for further information). A 2006 USEPA injunction and order for no-use buffer zones surrounding California red legged frog upland and aquatic habitats for certain pesticides may be viewed at http://www.cdpr.ca.gov/docs/endspec/rl_frog/index.htm; portions of the Program Renewal Area that are subject to the injunction are shown on Figure 3.4-1 (all figures for this section are shown at the end of this document).

General NPDES Aquatic Pesticide Use Permit

The SWRCB adopted the *Statewide General NPDES Permit for the Regulation of Residual Aquatic Pesticide Discharges to Waters of the U.S. from Algae and Aquatic Weed Control Applications* (Water Quality Order 2013-002-DWQ, General Permit # CAG990005). This General NPDES permit only authorizes the discharge of the following aquatic pesticides: 2,4-D, acrolein, copper, diquat, endothall, flumioxazin, fluridone, glyphosate, hydrogen peroxide, imazamox, imazapyr, penoxsulam, sodium carbonate peroxyhydrate, and triclopyr-based algaecides and aquatic herbicides, and adjuvants containing ingredients represented by the surrogate nonylphenol. Aquatic pesticides that are applied to waters of the U.S. in accordance with Federal Insecticide, Fungicide, and Rodenticide Act label requirements are not considered pollutants. However, pesticides or by-products that persist in or leave the treatment area after a specified treatment period are considered pollutants and require coverage under this General Permit.

Program Renewal Applicability. All aquatic pesticides used by Valley Water under the General NPDES permit are applied in accordance with the NPDES requirements. As required by the General NPDES Permit, Valley Water conducts aquatic herbicide applications according to a state-approved Aquatic Pesticide Application Plan. Per permit conditions and the Aquatic Pesticide Application Plan, Valley Water's staff record the type of herbicide used and where it has been applied. Annual monitoring reports are submitted to the SWRCB and RWQCB to document aquatic herbicide application events, effectiveness of BMPs, and monitoring data.

McAteer-Petris Act

The McAteer-Petris Act was enacted in 1965 to establish the Bay Conservation and Development Commission (BCDC) to promote responsible planning and regulation of the San Francisco Bay. The McAteer-Petris Act requires that "maximum feasible public access, consistent with a project be included as part of each project to be approved by the BCDC." BCDC jurisdiction in the San Francisco Bay Area extends over the Bay, up to mean high tide and to 5 feet above mean sea level in marshes; and over a 100-foot-wide shoreline band inland from the mean high tide line or the line 5 feet above mean sea level adjacent to marshes. BCDC also has salt pond jurisdiction, which consists of all areas diked off from the Bay and used between August 1966 and August 1969 for the solar evaporation of Bay water in the course of salt production.

Program Renewal Applicability. Any maintenance activities that are conducted within tidal waters of the South San Francisco Bay or areas determined to be within the 100-foot-wide shoreline band may require a permit from the BCDC.

Valley Water is currently authorized to perform SMP activities under BCDC Permit No. M1977 113.07, which expires on April 30, 2026. The existing permit was originally issued in February 1978 and since that time, has been amended seven times. For the Program Renewal, Valley Water will either request an amendment to this BCDC permit or request an extension of five years for the amended permit (Amendment No. 7) through 2030. All maintenance activities will comply with conditions of the Program Renewal's BCDC Permit.

California Endangered Species Act

The California Endangered Species Act (CESA) is defined in Section 2080 et seq. of the Fish and Game Code. CESA prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070).

Like FESA, CESA allows for incidental take of listed species. Take is defined under the F&G Code Section 86 as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Habitat degradation or modification is not expressly included in the definition of "take" under the Fish and Game Code. However, CDFW has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

Program Renewal Applicability. Several state-listed or candidate animal species may occur in the Program Renewal Area and could be impacted by Program Renewal activities, including Crotch's bumble bee (*Bombus crotchii*), San Francisco Bay-Delta longfin smelt, white sturgeon (*Acipenser transmontanus*), California tiger salamander, bald eagle,

Swainson's hawk, California Ridgway's rail, California black rail (*Laterallus jamaicensis coturniculus*), least Bell's vireo, tricolored blackbird (*Agelaius tricolor*), salt marsh harvest mouse, mountain lion (*Puma concolor*), and San Joaquin kit fox. The California condor, bank swallow (*Riparia riparia*), and California least tern are expected to occur in the Program Renewal Area only as nonbreeding foragers, and no impacts due to Program Renewal activities on these species are anticipated. No state-listed plant species occur within Program Renewal work areas.

Take of most of these species will be avoided, either because Program Renewal activities will not occur in locations where take can occur, or because of implementation of BMPs would avoid take. Following coverage of the Program Renewal under the forthcoming VHP amendment, if Program Renewal activities occur in areas where BMPs may not be adequate to avoid take (e.g., for species that are difficult to detect, such as the California tiger salamander), incidental take approval for VHP-covered state-listed species will be provided via the VHP for VHP-covered activities and species. Where take of state-listed species would occur for Program Renewal activities and/or species that are not covered under the VHP, incidental take coverage would be provided via Incidental Take Permits sought by Valley Water from CDFW, on an as-needed basis.

California Fish and Game Code

Lake and Streambed Alteration Program Renewal

California's Lake and Streambed Alteration Program is regulated under Section 1600 et seq. of the California Fish and Game Code. Under Fish and Game Code Section 1602, CDFW regulates projects that affect the flow, channel, or banks of rivers, streams and lakes.

Protection of Birds

California Fish and Game Code Section 3503 prohibits the take, possession or needless destruction of the nests or eggs of any bird, and Section 3503.5 makes it unlawful to take, possess or destroy any bird, nests or eggs of birds of prey (new world vultures, hawks, eagles, ospreys and falcons, and owls). Species protected by the MBTA may not be taken or possessed except as provided by rules and regulations adopted by the Secretary of the Interior in compliance with the MBTA (CDFW Code Section 3513). Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by CDFW.

Fully Protected Species

Species that are fully protected from all forms of take are listed in Fish and Game Code Section 3511 (birds), Section 5515 (fish), Section 4700 (mammals), and Section 5050 (amphibians). Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. In addition, recent legislation allows Natural Community Conservation Plans (NCCPs) to provide take authorization for fully protected species covered by an NCCP.

Senate Bill 147, approved in 2023, authorizes the CDFW to issue a permit under CEQA authorizing take of a fully protected species due to the implementation of specified projects and under certain conditions.

Program Renewal Applicability. Maintenance activities would occur within the jurisdiction of the CDFW and would require a Streambed Alteration Agreement with CDFW. Valley Water will apply for a Section 1602 Streambed Alteration Agreement for the Program Renewal.

Most native bird, mammal, and other wildlife species occurring in the Program Renewal Area are protected by the California Fish and Game Code. Program Renewal activities, such as vegetation management, may require the removal of vegetation where migratory birds are nesting. Compliance with the Fish and Game Code will be met through implementation of BMPs requiring pre-activity surveys in support of maintenance activities occurring during the nesting season so that take of migratory birds is avoided.

Fully protected species that may occur within Program Renewal work areas are the California condor, bald eagle, golden eagle, white-tailed kite (*Elanus leucurus*), California Ridgway's rail, California black rail, California least tern, salt marsh harvest mouse, and ringtail (*Bassariscus astutus*). The Program Renewal would qualify as a "maintenance project to critical regional or local water agency infrastructure" under Senate Bill 147, and therefore could obtain a take permit under CESA for fully protected species as necessary.

Native Plant Protection Act

The Native Plant Protection Act (Fish and Game Code Section 1900 et seq) is a state law that prohibits take of endangered or rare native plants (with some exceptions). The CNPS has developed a set of lists of native plants in California, categorized according to rarity. Plants on List 1A, List 1B, and List 2 meet the definitions of Fish and Game Code Section 1901 and Sections 2060 and 2067 (CESA) as rare or endangered species.

Program Renewal Applicability. Plants on List 1A, List 1B, and List 2 are fully considered during CEQA review of the Program Renewal in the context of this document.

Regional and Local Plans and Ordinances

Santa Clara Valley Habitat Plan

The VHP (ICF International 2012) provides a framework for promoting the protection and recovery of natural resources, including endangered and threatened species, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. It allows the County of Santa Clara, Valley Water, the Santa Clara Valley Transportation Authority and the cities of Gilroy, Morgan Hill, and San José (collectively, the Local Partners or Permittees) to receive endangered species permits for activities and projects they conduct and those under their jurisdiction. The Santa Clara Valley Open Space Authority also contributed to VHP preparation. The VHP protects, enhances, and restores natural resources in specific areas of Santa Clara County and contributes to the recovery of endangered species. Rather than separately permitting and mitigating individual projects, the VHP evaluates natural-resource impacts and mitigation requirements comprehensively in a way that is more efficient and effective for at-risk species and their essential habitats.

The VHP was developed in association with the USFWS and CDFW and in consultation with stakeholder groups and the general public. The USFWS has issued the Permittees a 50-year permit that authorizes incidental take of covered listed species under FESA, while CDFW has issued a 50-year permit that authorizes take of all covered species under the Natural

Community Conservation Planning Act. This approach allows the Permittees to streamline future mitigation requirements into one comprehensive Program Renewal. In addition to obtaining take authorization for each participating agency's respective activities, the cities and County are able to extend take authorization to project applicants under their jurisdiction.

The VHP provides takes authorization for the following 17 listed and non-listed species (i.e., covered species): coyote ceanothus (*Ceanothus ferrisiae*), Mount Hamilton thistle (*Cirsium fontinale* var. *campylon*), Santa Clara valley dudleya (*Dudleya setchellii*), fragrant fritillary (*Fritillaria liliacea*), Loma Prieta hoita (*Hoita strobilina*), smooth lessingia (*Lessingia micradenia* var. *glabrata*), Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. [subspecies] *albidus*), most beautiful jewelflower (*Streptanthus albidus* ssp. *peramoenus*), Bay checkerspot butterfly (*Euphydryas editha bayensis*), California tiger salamander, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, burrowing owl, least Bell's vireo, tricolored blackbird, and San Joaquin kit fox. Although the Tiburon Indian paintbrush (*Castilleja affinis* ssp. *neglecta*) is also a covered species under the VHP, the VHP covers impacts only on the known occurrence of the species at the Kirby Canyon landfill. It does not cover impacts on additional occurrences of Tiburon Indian paintbrush that may be discovered during the permit term.

The USFWS and CDFW also provide assurances to the Permittees that no further commitments of funds, land, or water will be required to address impacts on covered species beyond that described in the VHP to address changed circumstances. In addition to strengthening local control over land use and species protection, the VHP provides a more efficient process for protecting natural resources by creating new habitat reserves that will be larger in scale, more ecologically valuable, and easier to manage than the individual mitigation sites created under the current approach.

The VHP defines measures to avoid, minimize, and compensate for impacts on covered species and their habitats while allowing for the implementation of certain "covered projects" (see Table 3.3-6 of the VHP). Chapter 6 of the VHP includes detailed and comprehensive conditions to avoid and minimize impacts on the 18 covered species included in the plan area. These conditions are designed to achieve the following objectives:

- Provide avoidance of covered species during implementation of covered activities throughout the project site.
- Prevent take of individuals from covered activities as prohibited by law (e.g., take of fully protected species).
- Minimize impacts to natural communities and covered species where conservation actions will take place.
- Avoid and minimize impacts to wetlands and waters throughout the study area to facilitate project-by-project wetland permitting.

In addition, in conformance with the VHP, project proponents are required to pay impact fees in accordance with the types and acreage of habitat or "land cover" impacted. Land cover impacts are used because it is the best predictor of potential species habitat and is applicable to all of the covered species (with the partial exception of the burrowing owl). Surveys to determine presence/absence of species are not required for all species because, to make the provisions of the VHP simple and predictable, covered species are assumed to occupy suitable

habitat in impact areas, and mitigation is based on the assumption of take. VHP fees contribute to the VHP's conservation Program, which includes habitat acquisition, restoration, preservation, and management targeted at the covered species. For the 18 species covered, adherence to the requirements set forth in the VHP, and payment of applicable fees, satisfies any mitigation requirements of CEQA.

The Santa Clara Valley Habitat Agency (Habitat Agency) is currently updating the VHP through a Major Amendment process. The amendment is expected to be considered for approval in 2026, and includes the addition of new covered species, updates to the conservation strategy, adding the Program Renewal as a covered activity, expanding the Plan area boundary, and more. Species proposed to be added as covered species under the amendment include Hall's bush-mallow (*Malacothamnus hallii*), woodland woollythreads (*Monolopia gracilens*), the large marble butterfly (*Euchloe ausonides ausonides*), the monarch butterfly, Crotch's bumble bee, the Swainson's hawk, the mountain lion, the loggerhead shrike (*Lanius ludovicianus*), and the American badger (*Taxidea taxus*).

Program Renewal Applicability. The majority of Program Renewal impacts that require mitigation will be covered under the VHP once it is amended. Program Renewal activities are proposed for VHP inclusion via an amendment expected to be considered for approval in 2026. Following coverage of the Program Renewal under the forthcoming VHP amendment, incidental take approval for VHP-covered federally listed species will be provided via the VHP for VHP-covered activities and species. Impacts of VHP-covered activities will be mitigated via the payment of VHP fees and compliance with VHP conditions.

Local Tree Ordinances

Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various cities within the Program Renewal Area either because the ordinance by its terms is not applicable to Valley Water (e.g., it does not apply to tree removal on public property) and/or because of Hall v. Taft (1956) 47 Cal. 2d 177, 189 (which holds that entities operating under mandates set forth by state law, including water districts, are exempt from municipal police power regulation). Nevertheless, recognizing the importance of protected trees, Valley Water will compensate for tree removal where required within the riparian habitat. Tree ordinances/regulations for each jurisdiction are listed in Table 3.4-2, below and summarized in *Appendix C, General Plans Policies and Ordinances*.

Table 3.4-2. Local Tree Ordinances

Jurisdiction	Ordinance
City of Campbell	• Municipal Code, Title 21, Chapter 21.32 – Tree Protection Regulations • Municipal Code, Title 11, Chapter 11.08 – Street Trees and Parking Strips*
City of Cupertino	• Municipal Code, Title 14, Chapter 14.18 – Protected Trees • Municipal Code, Title 14, Chapter 14.12 – Trees*
City of Gilroy	• Municipal Code, Chapter 26 –Trees
City of Los Altos	• Municipal Code, Title 11, Chapter 11.08 – Tree Protections Regulations • Municipal Code, Title 9, Chapter 9.20 –Trees and Shrubs

Jurisdiction	Ordinance
Town of Los Altos Hills	• Municipal Code, Title 12, Chapter 2 – Trees, Shrubs, and Plants • Municipal Code, Title 12, Chapter 2 – Heritage Oaks • Municipal Code, Title 12, Chapter 2 – Heritage Trees
Town of Los Gatos	• Municipal Code, Chapter 29, Article 1, Division 2 – Tree Protection • Municipal Code, Chapter 26 – Trees and Shrubs
City of Milpitas	• Municipal Code, Title X, Chapter 2 – Tree Maintenance and Protection
City of Monte Sereno	• Municipal Code, Title 10, Chapter 10.15 – Tree Preservation
City of Morgan Hill	• Municipal Code, Title 12, Chapter 12.32 –Restrictions on Removal of Significant Trees
City of Mountain View	• Municipal Code, Chapter 32 – Trees, Shrubs, and Plants
City of Palo Alto	• Municipal Code, Title 8, Chapter 8.04 – Trees, Shrubs, Hedges and Plants • Municipal Code, Title 8, Chapter 8.10 – Tree and Landscape Preservation and Management
City of San Jose	• Municipal Code, Title 13, Chapter 13.32 – Tree Removal Controls • Municipal Code, Title 13, Chapter 13.28 – Street Tree, Hedges, and Shrubs
City of Santa Clara	• Municipal Code, Title 12, Chapter 12. 35 – Trees and Shrubs
City of Saratoga	• Municipal Code, Chapter 15, Article 15-50 – Tree Regulations
City of Sunnyvale	• Municipal Code, Title 19, Article 6, Chapter 19.94 – Tree Preservation
County of Santa Clara	• Municipal Code, Title C, Division C16 – Trees Preservation and Removal

3.4.3 Environmental Setting

Climate and Soils

The Program Renewal Area has a coastal Mediterranean climate characterized by mild, wet winters, and warm, dry summers. This area supports natural biological communities and endemic plant species that are adapted to this precipitation regime, as well as long periods of drought and frequent fire events. Soil types ultimately play a large role in influencing distributions of habitats and wildlife. As detailed in Section 3.9, "Hydrology and Geomorphology," soils vary considerably in the Program Renewal Area. Soils in and immediately surrounding the San Francisco Bay tend to be fine-textured, clayey soils deposited by tidal events. Soils in valley lowland areas and farther inland are very deep, medium-to-fine-textured soils, ranging from poorly to excessively drained. Soils at higher elevations in the valley and the surrounding foothills may be derived from sedimentary, basic igneous, or sometimes serpentine rock with clayey, loamy textured soils (NRCS 2024).

Sensitive serpentine-associated plants and animal communities occur in the Program Renewal Area along the edges of the Santa Clara Valley floor and foothills, including a large area on Coyote Ridge; small serpentine outcrops on the east side of Coyote Valley south to

the San Martin area; areas on the west side of Coyote Valley from the Santa Teresa Hills south to San Martin; small outcrops near Lexington, Calero, and Coyote Reservoirs; and inclusions within the Santa Clara Valley, such as at Communications Hill and Tulare Hill (Figure 3.4-2) (NRCS 2024). These locations support exposed bedrock outcrops, serpentine-derived soils, and/or alluvially deposited serpentine soils. Plant species found on serpentine soils are adapted to or able to tolerate harsh soil conditions, including a low calcium to magnesium ratio; a lack of essential nutrients such as nitrogen, potassium, and phosphorus; and high concentrations of heavy metals such as nickel and chromium that may be toxic to most plant species (Kruckeberg 1984). Thus, other plant species cannot grow in serpentine habitats as easily, and many serpentine-associated plants are special-status endemics that are restricted to serpentine soils.

Natural Communities and Land Cover Types

The Santa Clara Valley, which is dominated by agricultural and developed land uses, extends the length of the Program Renewal Area and is surrounded by the Santa Cruz Mountains to the west, the Diablo Range to the east, and the San Francisco Bay to the north. Plant communities in the Diablo Range to the east include grasslands, chaparral, and oak savannah. Communities to the west in the Santa Cruz Mountains include rolling grasslands, oak woodlands, and mixed hardwood and evergreen forests. Baylands in the north consist mostly of former salt evaporation ponds and remnant marshes and wetlands. As the Program Renewal Area is vast and contains some natural communities and land cover types that may not be subject to disturbance by the Program Renewal, for purposes of this document, only the land cover types that could be directly affected by maintenance activities are described in detail.

Natural communities and land cover types within the Program Renewal Area are classified according to the system described in the VHP (ICF International 2012), with the exception of tidal habitats in the northern portion of the Program Renewal Area, which are excluded from the VHP Program area. These tidal habitats are classified based on *A Manual of California Vegetation* (Sawyer et al. 2009). The dominant and characteristic plant and animal species for each natural community and land cover type that could be affected by Program Renewal activities are described below; VHP land cover types are also described in Section 3.3.5 of the VHP (ICF International 2012). Scientific names of plant species follow the nomenclature used in *The Jepson Manual: Vascular Plants of California* (Jepson Flora Project 2024).

Maps of natural communities and land cover types within the Program Renewal Area are not provided for this assessment due to the large scale of the Program Renewal and the need to field-verify VHP land cover types throughout the Program Renewal Area. VHP natural communities and land cover types within the VHP Plan area are mapped on the Habitat Agency's Geobrowser (Habitat Agency 2024) for areas that are currently within the VHP Program area, and have been mapped in additional areas of Santa Clara County to support the forthcoming VHP amendment. Tidal habitats in the northern portion of the Program Renewal Area are mapped by the San Mateo Resource Conservation District (2024).

Grassland

Based on the projections provided by Valley Water and the locations of potential unprojected work areas, maintenance activities could affect three grassland community types in the Program Renewal Area: rock outcrop (non-serpentine), California annual grassland, and non-serpentine native grassland. Maintenance activities will not geographically overlap

serpentine habitats that are mapped in the Program Renewal Area and described by the VHP, including mixed serpentine chaparral, serpentine bunchgrass grassland, serpentine rock outcrop/barrens, and serpentine seep communities. Due to this, these natural community types are not described here (although detailed descriptions can be found in Section 3.3.5 of the VHP).

CALIFORNIA ANNUAL GRASSLAND

California annual grassland habitat is widespread in the Program Renewal Area and occurs commonly on undeveloped parcels and constructed levees. The largest expanses of this habitat are present on hills surrounding Coyote Valley, in the northern portion of the Santa Teresa Hills, to the east of Anderson Reservoir, and elsewhere along the hilly eastern margin of the Program Renewal Area. This habitat type also extends into Alviso, and along the Valley floor on both sides of upper Coyote Creek north of Morgan Hill. Where grasslands, including those within Program Renewal work areas, are located adjacent to developed areas, they may be maintained by regular mowing.

Grassland communities are characterized by the dominance of grasses and herbaceous plant species, with less than 10 percent cover by trees and shrubs. Dominant plant species in the Program Renewal Area include nonnative annual grasses such as ripgut brome (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), and wild oats (*Avena* sp.). Associated species include many native and nonnative forbs such as California poppy (*Eschscholzia californica*), lupine (*Lupinus* spp.), and filaree (*Erodium* spp.).

Wildlife use of grasslands in much of the Program Renewal Area is limited by human disturbance, the extent of the habitat present in a specific area (which is often limited, especially in Valley floor areas), the high abundance of nonnative and invasive species that typically characterize this habitat, and the isolation of grassland remnants from more extensive grasslands in the region. As a result, some of the wildlife species associated with extensive grasslands, such as the grasshopper sparrow (*Ammodramus savannarum*) and western meadowlark (*Sturnella neglecta*), are absent from less extensive, isolated patches of grassland on the Valley floor, where the majority of Program Renewal activities are projected to occur. However, the more extensive grasslands located on the periphery of the Valley floor (as described above) are contiguous with larger expanses of grassy open space, and thus provide higher-quality habitat for grassland-associated wildlife species.

California ground squirrels (*Otospermophilus beecheyi*), where they are present, are an important component of grassland communities, providing a prey base for diurnal raptors (e.g., hawks and falcons) and terrestrial predators. Burrows of California ground squirrels also provide refugia for common amphibians and reptiles (discussed below), as well as special-status wildlife species such as the burrowing owl and California tiger salamander in portions of the Program Renewal Area where these species occur. Other rodent species that are present in grassland habitats in the Program Renewal Area include the California vole (*Microtus californicus*), valley pocket gopher (*Thomomys bottae*), and deer mouse (*Peromyscus maniculatus*). Diurnal raptors such as red-tailed hawks (*Buteo jamaicensis*), northern harriers (*Circus hudsonius*), white-tailed kites, and American kestrels (*Falco sparverius*) forage for these small mammals over grasslands during the day, and at night nocturnal raptors, such as American barn owls (*Tyto furcata*), forage for nocturnal rodents, such as deer mice. Several grassland-associated special-status bird species, such as the

grasshopper sparrow and loggerhead shrike, nest and forage in more extensive grassland habitats in the Program Renewal Area.

Grasslands provide foraging habitat for common and special-status bats that roost in the Program Renewal Area, such as the pallid bat (*Antrozous pallidus*) and Mexican free-tailed bat (*Tadarida brasiliensis*). A number of terrestrial mammals also occur in grasslands throughout the Program Renewal Area; mammals that are adapted to urban areas such as the coyote (*Canis latrans*), and striped skunk (*Mephitis mephitis*) utilize smaller grassland habitats on the Valley floor, while others such as the American badger and black-tailed jackrabbit (*Lepus californicus*) prefer more extensive grasslands, generally those located on the periphery of the Valley floor. Reptiles such as western fence lizards (*Sceloporus occidentalis*), southern alligator lizards (*Elgaria multicarinata*), western skinks (*Plestiodon skiltonianus*), western terrestrial garter snakes (*Thamnophis elegans*), gopher snakes (*Pituophis catenifer*), racers (*Coluber constrictor*), western rattlesnakes (*Crotalus viridis*), and common kingsnakes (*Lampropeltis getula*) also frequent these habitats.

Non-Serpentine Native Grassland

Native non-serpentine grassland habitat is distributed in small patches throughout portions of the California annual grassland habitat present throughout the Program Renewal Area, and typically includes a component of native purple needlegrass (*Nassella pulchra*) growing in association with nonnatives such as wild oats and ripgut brome. It is relatively rare to find native grasslands dominated (i.e., greater than 50 percent relative percent cover) by purple needlegrass in the Santa Clara Valley.

Due to the limited extent of these areas, wildlife species that occur within non-serpentine native grassland habitat within the Program Renewal Area are those that are associated with California annual grasslands that typically abut or surround these habitats, described above.

Rock Outcrop (Non-Serpentine)

A small area of rock outcrops, consisting of exposed non-serpentine bedrock surrounded by California annual grassland, occurs in the Program Renewal Area north of Alamitos Creek in the Santa Teresa Hills. These rock outcrops are devoid of soil and typically do not support vascular plants except within crevices that have accumulated soil. One exception is that several species of non-special-status dudleya (*Dudleya* spp.) are able to grow in cracks and fractures of the outcrops. In addition, mosses and other epiphytes may grow in some crevices that can retain water for a short duration.

Rock outcrops provide cover, basking opportunities, and foraging habitat for many species of reptiles, including the western fence lizard, southern alligator lizard, western skink, western terrestrial garter snake, gopher snake, and western rattlesnake. Bats, such as the Mexican free-tailed bat, may roost in deep crevices in rock outcrops.

Chaparral and Northern Coastal Scrub

Maintenance activities could affect coyote brush scrub, northern coastal scrub/Diablan sage scrub, and northern mixed chaparral/chamise chaparral, which occur adjacent to projected work locations. These land cover types are described in detail below. Maintenance activities will avoid serpentine habitats throughout the Program Renewal Area, including mixed serpentine chaparral, which is mapped adjacent to maintenance activity areas. Due to this,

this land cover type is not described here (although a detailed description can be found in Section 3.3.5 of the VHP).

COYOTE BRUSH SCRUB

Coyote brush scrub is a type of northern coastal scrub that is dominated by coyote brush (*Baccharis pilularis*). It is considered an early successional scrub type that frequently colonizes former grasslands. Coyote brush scrub composes a relatively small portion of the Program Renewal Area. In portions of the Program Renewal Area where maintenance activities are likely to occur, this community occurs primarily below Coyote Main Dam, at the confluence of Calero Creek and Alamitos Creek, along Coyote Creek, in the hills above Anderson Reservoir, and along Uvas-Carnadero Creek.

This habitat is characterized by drought-tolerant, shrub-dominated landscapes that are exposed to intense sunlight, with dense stands of shrubs that support little understory and are prone to intense and regular fire cycles in natural settings. After a fire event, this habitat recovers quickly and supports extraordinary blooms of annual forbs adapted to fire for several years as the shrub canopy develops. Typical dominant species found in coyote brush scrub communities is California sagebrush (*Artemisia californica*).

Areas where coyote brush scrub habitat occurs in the Program Renewal Area are small and often surrounded by other habitat types, such as annual grassland and oak woodland. Therefore, wildlife utilizing this habitat are typically representative of more extensive adjacent and surrounding habitats. Nevertheless, amphibians are typically absent or scarce due to the very dry conditions, and many other wildlife species occurring here either derive moisture directly from food or synthesize their water metabolically from seeds (e.g., the California pocket mouse [*Chaetodipus californicus*]). Mammals that use chaparral and coastal scrub habitats for cover include the coyote, bobcat (*Lynx rufus*), and brush rabbit (*Sylvilagus bachmani*), among others. Nests of San Francisco dusky-footed woodrats (*Neotoma fuscipes annectens*) often are present where oaks and/or poison oak are mixed with coyote brush scrub. California mice (*Peromyscus californicus*), which occupy woodrat nests, also are present. Bird species that nest in chaparral habitats include the California thrasher (*Toxostoma redivivum*), California towhee (*Melozone crissalis*), spotted towhee (*Pipilo maculatus*), California quail, wrentit (*Chamaea fasciata*), loggerhead shrike, lesser goldfinch (*Spinus psaltria*), and Anna's hummingbird (*Calypte anna*). Rufous-crowned sparrows (*Aimophila ruficeps*) often nest where this habitat supports California sagebrush. Reptiles that occur in these habitats include the gopher snake, western rattlesnake, southern alligator lizard, and western fence lizard.

NORTHERN COASTAL SCRUB/DIABLAN SAGE SCRUB

The northern coastal scrub/Diablan sage scrub land cover type occurs on dry, exposed slopes with shallow soils within the Program Renewal Area. This land cover type can incorporate several different shrub communities, and supports a diverse assemblage of native shrubs such as California sagebrush, black sage (*Salvia mellifera*), and yerba santa (*Eriodictyon californicum*). California buckwheat (*Eriogonum fasciculatum*), sticky monkey flower (*Diplacus aurantiacus*), and bigberry manzanita (*Arctostaphylos glauca*) also occur in this land cover type. In areas with dense shrub cover there is very little herbaceous community; however, occasional openings support both native and nonnative grasses and forbs.

Northern coastal scrub/Diablan sage scrub provides nesting habitat for birds such as the California scrub-jay (*Aphelocoma californica*), California towhee, spotted towhee, wrentit, California thrasher, lesser goldfinch, and Anna's hummingbird. Mammal species that use such scrub habitat include the coyote, California mouse (*Peromyscus californicus*), and brush rabbit. Reptiles that occur here include the gopher snake, western rattlesnake, southern alligator lizard, and western fence lizard.

NORTHERN MIXED CHAPARRAL/CHAMISE CHAPARRAL

Plant species composition, vegetation density, and height vary considerably within this land cover type. In general, northern mixed chaparral/chamise chaparral is characterized by thick-leaved, drought resistant shrubs ranging from very dense with no understory to semi-open stands with variable understory species. Dominant shrubs include manzanita (*Arctostaphylos* spp.), ceanothus (*Ceanothus* spp.), and chamise (*Adenostoma fasciculatum*). Common understory includes poison oak, sticky monkey flower, and yerba santa.

Because northern mixed chaparral/chamise chaparral communities are typically dry and provide relatively low and homogeneous structure, wildlife species diversity in these areas is often low. Wildlife species associated with these communities are often characteristic of larger adjacent or surrounding habitats, such as oak woodlands. The scrub-associated wildlife species described for the northern coastal scrub/Diablan sage scrub community above are expected to occur in the northern mixed chaparral/chamise chaparral community as well.

Oak Woodland

Oak woodland communities are common throughout the Program Renewal Area, and maintenance activities could impact any of the oak woodland community types classified by the VHP. These communities typically occur at elevations above 300 feet in the Program Renewal Area, and are characterized by native California oaks (e.g., coast live oak [*Quercus agrifolia*], valley oak [*Quercus lobata*], and blue oak [*Quercus douglasii*]). Representative understory plants include weedy annual grasses, native and introduced forbs, and occasional shrubs, such as toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), California coffeeberry (*Rhamnus californica*), and common snowberry (*Symphoricarpos albus var. laevigatus*). The special-status species big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*) and robust monardella (*Monardella villosa* ssp. *globosa*) occur in oak woodland habitats in the Program Renewal Area.

Differences in habitat characteristics between the various oak woodland types that occur throughout the Program Renewal Area are described in the sections below. Because wildlife use of these communities is similar, wildlife species are described here.

All oak woodland habitats produce mast crops that are an important food source for many birds and mammals, including the California scrub-jay, acorn woodpecker (*Melanerpes formicivorus*), California quail, and black-tailed deer (*Odocoileus hemionus*). Small numbers of yellow-billed magpies (*Pica nuttalli*) nest in the crowns of these oaks, particularly in more widely scattered valley oaks. Hollow trees and logs provide denning sites for mammals such as the coyote and striped skunk, while cavities in mature trees are used by cavity-dwelling species including woodpeckers, chestnut-backed chickadees (*Poecile rufescens*), oak titmice (*Baeolophus inornatus*), American kestrels, and white-breasted nuthatches (*Sitta carolinensis*). Bats, such as the California myotis (*Myotis californicus*) and long-eared myotis

(*Myotis evotis*), may use hollows of larger, older oak trees for roosting. San Francisco dusky-footed woodrats also are frequently found in oak woodlands; this species occurs in mixed oak woodland habitat where dense understory vegetation provides cover and foraging opportunities. The native deer mouse and California mouse nest and forage in this habitat as well. Reptiles such as gopher snakes, common garter snakes (*Thamnophis sirtalis*), and western fence lizards occur regularly in this habitat.

Oak woodlands provide cover for bobcats and coyotes that may occasionally wander through these communities. Several species of amphibians, such as the arboreal salamander (*Aneides lugubris*), can be found in oak woodlands, especially where moisture is retained under fallen wood and in crevices in oaks. Reptiles that occur here include the ringneck snake (*Diadophis punctatus*) and western skink.

Valley Oak Woodland

Large, mature, and evenly spaced valley oak trees dominate the overstory of the valley oak woodland land cover type.

Mixed Oak Woodland and Forest

The mixed oak woodland and forest community in the Program Renewal Area contains different oak species in varying levels of dominance. Canopy cover ranges from closed to open, and the three most common oak species are coast live oak, blue oak, and valley oak. Other tree species, including natives and nonnatives, can occur as dominant species or scattered individuals. In most locations where mixed oak woodland and forest adjoins California annual grassland, the understory contains species typical of the California annual grassland community type described above. However, where mixed oak woodland and forest is surrounded by scrub habitat, the woodland understory has more of a shrub component, such as that described for coyote brush scrub above.

Coast Live Oak Forest and Woodland

Coast live oak woodland and forest generally occurs on mesic (moderately moist) slopes and in lowland areas with relatively deep, fertile soil. It typically has a closed canopy, though the canopy can range from closed to open. This community is dominated by stands of coast live oaks and other species. Understory species vary considerably; common natives include toyon, poison oak, and California sagebrush, and common nonnatives often consist of annual grasses.

Blue Oak Woodland

Blue oak woodland is less common in the Program Renewal Area compared to other oak woodland communities. This habitat is characterized by a relatively open and mature canopy of blue oak trees. The understory can vary, but is often similar in composition to adjacent habitats, such as adjacent California annual grasslands.

Foothill Pine-Oak Woodland

Foothill pine-oak woodland generally occurs in drier areas with shallow soils and often intergrades with scrub and chaparral habitats. The dominant tree species is foothill pine (*Pinus sabiniana*). The understory can vary, but is often similar in composition to adjacent

habitats, such as California annual grassland, and is often sparse in some areas due to a buildup of pine needles and thatch.

MIXED EVERGREEN FOREST

Mixed evergreen forest supports a canopy dominated by California bay (*Umbellularia californica*), with a significant, although less dominant, component of Douglas fir (*Pseudotsuga menziesii*). Generally, higher elevation forests support a higher component of Douglas fir, while middle elevations forests are dominated by California bay. Some coast live oak is often present as well; however, it is most prevalent at lower elevations. Due to the dense canopy, understory development within this habitat is generally minimal and consists of sparse shrubs and herbaceous plants such as California blackberry (*Rubus ursinus*), California wood fern (*Dryopteris arguta*), and California rose (*Rosa californica*).

Riparian Forest and Scrub

Riparian forest and scrub communities occur along creeks and rivers in the Program Renewal Area. Because maintenance activities are focused within these areas, the Program Renewal could impact any of the riparian forest and scrub community types classified by the VHP.

Even though riparian land cover is limited in the Program Renewal Area, these habitats contribute a disproportionately high amount to landscape-level wildlife species diversity. The presence of water and abundant invertebrate fauna provide foraging opportunities for many species. The diverse habitat structure provides cover, nesting opportunities, and migratory corridors for many wildlife species in the region, supporting the most diverse bird communities in the Program Renewal Area (Rottenborn 1997).

As a result of the long history of human disturbance, isolation, and other urban-associated pressures that began in the late 1700s, many riparian habitats in the Program Renewal Area have undergone a shift in composition. For example, Grossinger et al. (2007) documented a substantial shift in land cover along much of Coyote Creek, from relatively open sycamore alluvial woodland, riparian scrub, and unvegetated gravel bars to more dense and homogeneous riparian forest. In addition, riparian forests and woodlands in the Program Renewal Area are predominately restricted to narrow corridors along streams, and many reaches of streams support little or no woody vegetation. In some areas, channels are lined with concrete, riprap, or gabions (e.g., along the Guadalupe River near Hillsdale Avenue). Although native trees dominate most riparian woodlands and forests in the Program Renewal Area, nonnatives abound as well, and exotic species such as eucalyptus (*Eucalyptus* spp.), giant reed (*Arundo donax*), tree-of-heaven (*Ailanthus altissima*), elms (*Ulmus* spp.), and others.

In some areas, riparian forests and woodlands have been protected, and in some cases restored (particularly along the larger streams such as Coyote Creek and the Guadalupe River), by Valley Water and others. Conversely, where riparian forests and woodlands pass through urban areas, disturbance from unhoused individuals has contributed to the degradation of these habitats. Over the past several years, unhoused encampments, with associated trash and debris, have increased along urban streams in the Santa Clara Valley. These encampments contribute to contamination of waterways and damage to riparian communities (e.g., due to destabilization of stream banks). Encampments may also result in increased fire risk due to the presence of abundant fuel along the riparian corridor and the

use of cookstoves/propane by unhoused individuals. Wildfire damage has occurred along some urban streams in the Program Renewal Area.

WILLOW RIPARIAN FOREST AND SCRUB

Willow riparian forest and scrub is the most common riparian habitat in the Program Renewal Area. This community occurs along the majority of drainages in the Santa Clara Valley.

Willow species, such as the red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and sandbar willow (*Salix exigua*), as well as mulefat (*Baccharis salicifolia*), dominate willow riparian forests, woodlands, and scrub habitat in the Program Renewal Area. Most willow riparian habitat in the Program Renewal Area, especially within and near urban areas, also supports invasive trees such as black locust (*Robinia pseudoacacia*), holly oak (*Quercus ilex*), eucalyptus, tree-of-heaven, and elms, as well as invasive herbaceous plants such as periwinkle (*Vinca major*) and English ivy (*Hedera helix*), which often dominate the understory. Other willow riparian habitats, especially those located farther away from urban areas or where restoration has occurred, contain native understory species such as California blackberry, poison oak, toyon, and Mexican elderberry (*Sambucus mexicana*).

Extensive willow riparian habitats that support large, mature riparian trees occur along certain reaches of Coyote Creek and the Guadalupe River, with less extensive reaches dominated by mature trees occurring along other SMP-maintained streams in the Program Renewal Area as well. Dominant native canopy species in these areas include willows and Fremont cottonwoods (*Populus fremontii*), along with native understory species such as elderberry and wild rose (*Rosa californica*).

The wider, more mature willow riparian corridors in the Program Renewal Area support suitable foraging and breeding habitat for several functional groups of birds including insectivores (e.g., warblers, flycatchers), seed-eaters (e.g., finches), raptors, and cavity-nesters (e.g., swallows and woodpeckers). Among the numerous species of birds that use the riparian habitats in the Program Renewal Area for breeding are the western flycatcher (*Empidonax difficilis*), black-headed grosbeak (*Pheucticus melanocephalus*), warbling vireo (*Vireo gilvus*), yellow warbler (*Setophaga petechia*), belted kingfisher (*Ceryle alcyon*), and black-chinned hummingbird (*Archilochus alexandri*). Riparian habitats also support many native migrant and wintering bird species such as the Swainson's thrush (*Catharus ustulatus*) and Wilson's warbler (*Cardellina pusilla*).

Several species of reptiles and amphibians occur in these riparian corridors in the Program Renewal Area. Leaf litter, downed tree branches, and fallen logs provide cover for the arboreal salamander, western toad (*Anaxyrus boreas*), and Pacific tree frog (*Pseudacris regilla*). Several lizards may also occur here, including the western fence lizard, western skink, and southern alligator lizard. Northwestern pond turtles and nonnative red-eared sliders (*Trachemys scripta*) use riparian habitat, particularly for breeding and winter aestivation. Small mammals such as the ornate shrew (*Sorex ornatus*), California vole, and Audubon's cottontail (*Sylvilagus audubonii*) use these riparian habitats as well. San Francisco dusky-footed woodrats occur, often at high densities, in riparian habitats in less developed areas, but they are typically absent from heavily urbanized streams. Medium-sized mammals, such as the raccoon (*Procyon lotor*) and striped skunk, also are common in this habitat. Nonnatives such as the Virginia opossum (*Didelphis virginiana*), eastern fox squirrel (*Sciurus*

niger), Norway rat (*Rattus norvegicus*), red fox (*Vulpes vulpes*), and feral cat (*Felis catus*), which are more common within and near urban portions of the Program Renewal Area, may harass, compete with, or depredate eggs and young of native birds and small mammals in riparian habitats, reducing the quality of this habitat for native riparian-associated wildlife species.

Central California Sycamore Alluvial Woodland

Central California sycamore alluvial woodland, a CDFW sensitive natural vegetation community (CDFW 2024a), is uncommon in the Program Renewal Area and occurs along Pacheco Creek east of Gilroy, along Coyote Creek above Coyote Reservoir, along upper Tar Creek, and along Coyote Creek below Coyote Reservoir in Coyote Valley. Within these areas, sycamore woodland is found on broad valley floors along low, braided riparian channels, and usually only along low-gradient streams flowing over deep alluvial deposits. However, alluvial fan geomorphic landscape where this habitat type may have been more common historically has largely been converted over the past 100-150 years in stages to agriculture and urban development with manipulated streamflow and channel engineering, creating a very different disturbance regime (San Francisco Estuary Institute 2006, San Francisco Estuary Institute-Aquatic Science Center and H. T. Harvey & Associates 2017).

Sycamore alluvial woodland stands have an open canopy dominated by western sycamore (*Platanus racemosa*), often interspersed with white alder (*Alnus rhombifolia*) and willows. Other associated tree species may include valley oak, coast live oak, and California bay. Winter flows typically scour the understory vegetation each season, and as such, herbaceous vegetation is spare and patchy. Species such as willows, coyote brush, mulefat, California buckeye (*Aesculus californica*), blackberry (*Rubus* spp.), Italian thistle (*Carduus pycnocephalus*), poison oak, common chickweed (*Stellaria media*), and bedstraw (*Galium aparine*) may occur along the outer stream banks.

Sycamore alluvial woodlands provide habitat for many of the wildlife species discussed under *Willow Riparian Forests, Woodlands, and Scrub* above. In addition, large sycamore trees present in this community provide roosting habitat for a number of species of bats, including the pallid bat, Mexican free-tailed bat, Yuma myotis (*Myotis yumanensis*), California myotis, and big brown bat (*Eptesicus fuscus*). Cavity-nesting bird species, such as woodpeckers and American kestrels, are also likely to be found nesting in this habitat. Raptors such as red-tailed hawks, red-shouldered hawks (*Buteo lineatus*), and great-horned owls (*Bubo virginianus*) nest in the larger trees in this habitat and forage in adjacent areas. Species that prefer thick understory cover, such as towhees and sparrows, are less abundant in sycamore woodlands compared with other riparian habitats.

Mixed Riparian Woodland and Forest

Mixed riparian woodland and forest habitat is widespread along streams in the Program Renewal Area, including along Pacheco Creek, Uvas-Carnadero Creek, Llagas Creek, Coyote Creek, Calero Creek, Calero Creek, Alamitos Creek, and Thompson Creek. This community is composed of white alder, Fremont cottonwood, western sycamore, coast live oak, valley oak, California bay, and box elder (*Acer negundo*). Understory trees and shrubs include willows, California buckeye, blackberry, and poison oak.

The structural diversity of mixed riparian woodland and forest in the Program Renewal Area supports high diversities of riparian-breeding species, and many of the same species found

in willow riparian forests also are present in mixed riparian habitats. However, the lower vegetation volume within mixed riparian woodland and forest results in lower bird densities compared to willow riparian forest. Nevertheless, wildlife species that prefer riparian habitats with lower-density vegetation and higher structural diversity are likely to be present throughout this habitat type, including the chestnut-backed chickadee, oak titmouse, bushtit (*Psaltriparus minimus*), black phoebe (*Sayornis nigricans*), California scrub-jay, northern house wren (*Troglodytes aedon*), American robin (*Turdus migratorius*), and dark-eyed junco (*Junco hyemalis*), as well as several species of finches. Raptors, such as red-shouldered hawks and Cooper's hawks (*Accipiter cooperii*), nest within these riparian corridors and forage in adjacent habitats. Oak, cottonwood, and sycamore trees also support cavity-nesting bird species such as woodpeckers and American kestrels, as well as colonies of roosting bats.

RIVERINE (STREAMS)

Streams in the Program Renewal Area include perennial streams and rivers that provide surface flow year-round, intermittent streams that have surface flow (with some groundwater contribution) for a portion of the year but are dry for at least several months in most years, and ephemeral streams that contain surface runoff only for brief periods following rain events. Flows within streams below reservoirs and pipelines are augmented by managed water releases from these sources, thus maintaining perennial conditions.

Three general stream types occur in the Program Renewal Area: natural, mixed, and concrete. Natural channels are streams that have unmodified beds and banks. Mixed channels are modified and often lined with excavated earth, rock rip-rap, gabions, concrete, or flood walls, but support earthen stream-bottoms. Concrete channels are defined by concrete lining present in the channel bed. Creek and stream channels may be vegetated with wetland vegetation, riparian vegetation, or open water, depending on the extent and type of modification applied.

Amphibians such as the native western toad and Pacific tree frog and nonnative bullfrog (*Lithobates catesbeianus*) are common in perennial and longer-lasting intermittent creeks and streams throughout the Program Renewal Area. The native northwestern pond turtle is present in low numbers in some reaches of these streams, as are several species of nonnative turtles that have been released locally from captivity such as red-eared sliders and painted turtles (*Chrysemys picta*). Waterbirds, such as the mallard (*Anas platyrhynchos*), green heron (*Butorides virescens*), great egret (*Ardea alba*), and belted kingfisher forage in these waters. Bats, including the Yuma myotis and big brown bat, forage aerially on insects over these streams.

A number of fish also use the creek and stream channels in the Program Renewal Area, including several species of native fish. The rivers and creeks of Santa Clara County are home to over 20 native and over 20 nonnative species of fish (Valley Water 1995; Leidy 2007; Smith 2019; Valley Water 2008, 2008b, 2019, 2020, 2021; Valley Water unpublished data).

According to Valley Water fish sampling and relocation data (2002-2013); various Valley Water fish monitoring efforts within Stevens Creek, Guadalupe River, and Coyote Creek watersheds (Smith 2019; Valley Water 2008, 2008b, 2019, 2020a, 2021a; Valley Water unpublished data); and Leidy (2007), the most common native fish in Program Renewal Area streams draining to San Francisco Bay include the southern coastal roach (*Lavinia symmetricus*), prickly sculpin (*Cottus asper*), Sacramento sucker (*Catostomus occidentalis*),

and threespine stickleback (*Gasterosteus aculeatus*), which occur in most watersheds and sub-watersheds in the Program Renewal Area. The CCC steelhead and Central Valley fall-run Chinook salmon are anadromous fish that spawn in several of these streams, such as Stevens Creek, Coyote Creek, Upper Penitencia Creek, the Guadalupe River, and Los Gatos Creek (Independent Science Advisors 2006, Smith 2019, Valley Water 2020). The native, anadromous Pacific lamprey (*Entosphenus tridentata*) has been observed in several streams in the Program Renewal Area such as the Guadalupe River, Coyote Creek, and Upper Penitencia Creek (Stillwater Sciences 2018, Valley Water 2020a, 2021a). The creeks in the Pajaro River basin, which drain to Monterey Bay, support many of the same species as the creeks draining into San Francisco Bay. Dominant native fish species occurring in these creeks include species such as the Pacific lamprey, southern coastal roach, Monterey hitch (*Lavinia exilicauda harengus*), pikeminnow (*Ptychocheilus grandis*), threespine stickleback, and riffle sculpin (*Cottus gulosus*), as well as the SCCC steelhead (Smith 1982).

A number of nonnative fish have been introduced to the Program Renewal Area, such as mosquitofish (*Gambusia affinis*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), pumpkinseed (*Lepomis gibbosus*), green sunfish (*Lepomis cyanellus*), common carp (*Cyprinus carpio*), goldfish (*Carassius auratus*), fathead minnow (*Pimephales promelas*), bigscale logperch (*Percina macrolepida*), inland silverside (*Menidia beryllina*), yellow fin goby (*Acanthogobius flavimanus*), golden shiner (*Notemigonus crysoleucas*), red shiner (*Cyprinella lutrensis*), striped bass (*Morone saxatilis*), and threadfin shad (*Dorosoma petenense*).

Conifer Woodland

Based on the locations of potential unprojected work areas, maintenance activities could affect two conifer woodland community types in the Program Renewal Area: ponderosa pine woodland and redwood forest. Maintenance activities will avoid knobcone pine woodland in the Program Renewal Area, as this community occurs only at higher elevations and is not located near any projected work areas. Thus, knobcone pine woodland is not described here (although a detailed description can be found in Section 3.3.5 of the VHP).

REDWOOD FOREST

Redwood forests of the Santa Cruz Mountains occur along ocean-facing canyons, on coastal slopes, and along riparian corridors that receive high winter rainfall as well as coastal fog. Douglas fir and the broadleaved species madrone (*Arbutus menziesii*), tanbark oak (*Lithocarpus densiflorus*), and California bay are important components of this habitat on drier slopes and ridges. Homogeneous stands of coast redwood occur in moist areas such as along ravines and associated slopes, which provide adequate water to support this species. Soils in redwood forests are typically well-developed and rich in organic matter. Shade-loving herbs such as western sword fern (*Polystichum munitum*), bracken fern (*Pteridium aquilinum*), redwood violet (*Viola sempervirens*), California strawberry (*Fragaria californica*), and redwood sorrel (*Oxalis oregana*) are common understory species. Shade-tolerant trees, particularly tanbark oak, madrone, and, along watercourses, bigleaf maple (*Acer macrophyllum*) and red alder (*Alnus rubra*), may also be present beneath the dense canopy.

Understory plants in redwood forests provide foraging opportunities for a number of wildlife species, although tannins and other compounds produced by redwoods deter many invertebrates, resulting in limited foraging opportunities for many insectivorous wildlife species. Small mammals that occur in this habitat include the Trowbridge's shrew (*Sorex trowbridgei*), broad-handed mole (*Scapanus latimanus*), and California myotis. Several

species of amphibian thrive in the moist environment of the redwood forest floor and associated small creeks, including the California giant salamander (*Dicamptodon ensatus*) and California newt (*Taricha torosa*). Common birds in redwood forests include the western screech-owl (*Megascops kennicottii*), Steller's jay (*Cyanocitta stelleri*), common raven (*Corvus corax*), chestnut-backed chickadee, brown creeper (*Certhia americana*), Pacific wren (*Troglodytes pacificus*), and western flycatcher. Redwood forests also support banana slugs (*Ariolimax columbianus*), as well as many species of arachnids and other invertebrates.

Ponderosa Pine Woodland

Ponderosa pine woodland is extremely limited in the Program Renewal Area, occurring only at higher elevations in the foothills of the Diablo Range near the upper limit of the 1,000-foot elevation limit for the Program Renewal Area. Within this habitat, ponderosa pines (*Pinus ponderosa*) grow in widely spaced stands, typically with an understory of California annual grassland and few to no shrub species present. Additional tree species that may be present in this habitat include black oak (*Quercus kelloggii*), coast live oak, and Pacific madrone, and bigberry manzanita shrubs may also occur in some areas.

Due to the limited distribution of ponderosa pine woodland in the Program Renewal Area, wildlife species that use this habitat are expected to be characteristic of adjacent, more extensive land cover types (i.e., the California annual grassland and oak woodland natural community types discussed above). In addition, because this habitat is relatively open, wildlife species associated with dense cover and understory vegetation are not expected to make regular use of this habitat.

Wetland

Because Program Renewal maintenance activities are focused within wetland areas, the Program Renewal could impact both of the wetland community types classified by the VHP (i.e., coastal and valley freshwater marsh and seasonal wetland).

Coastal and Valley Freshwater Marsh

In the Program Renewal Area, coastal and valley freshwater marsh communities typically occur in relatively long, linear patches, such as those along the lower freshwater reaches of streams that feed into the San Francisco Bay (e.g., Saratoga Creek, Calabazas Creek, Permanente Creek, Guadalupe River); along Guadalupe Creek near the Los Capitancillos Percolation Ponds; and along Coyote Creek in the region of the Coyote Creek Park Chain.

Freshwater marshes are present primarily where perennial or near-perennial inundation by shallow, fresh water occurs in an open (i.e., not wooded) environment. These marshes typically are densely vegetated and dominated by bulrush (*Scirpus* spp.), rushes (*Juncus* spp.), sedges (*Cyperus* spp.), bur reed (*Sparganium* spp.) and cattails (*Typha* spp.). Other common freshwater marsh herbaceous species in the Program Renewal Area are native and nonnative smartweeds (*Polygonum* or *Persicaria* spp.) and primrose (*Ludwigia* spp.).

Freshwater marshes provide habitat for numerous bird species including ducks, gulls, terns, herons, egrets, and other waterbirds. The sora (*Porzana carolina*) and Virginia rail (*Rallus limicola*) forage in freshwater marshes in the Program Renewal Area during migration and in winter. American coots (*Fulica americana*), common moorhens (*Gallinula chloropus*), pied-billed grebes (*Podilymbus podiceps*), and several species of ducks breed in freshwater

wetlands located in channels and ponds in the Program Renewal Area. Passerine species that breed in these marshes include the marsh wren (*Cistothorus palustris*), song sparrow (*Melospiza melodia*), common yellowthroat (*Geothlypis trichas*), and red-winged blackbird (*Agelaius phoeniceus*). A variety of finches, sparrows, and other birds that nest in nearby habitats will also use these wetlands for cover and foraging habitat. Amphibians such as the native Pacific tree frog and western toad, as well as the nonnative American bullfrog, also are present in this habitat. Common garter snakes and western terrestrial garter snakes forage in these wetlands for amphibian larvae.

Seasonal Wetland

Seasonal wetlands in the Program Renewal Area typically occupy smaller, more discrete areas compared to freshwater marshes. They are also found intermixed with freshwater marsh communities along Coyote Creek in the Coyote Creek Park Chain area, and in the southern portion of the Program Renewal Area along Tar Creek, Tick Creek, and Uvas Creek.

Seasonal wetlands form during the rainy season, typically in topographic low areas with underlying confining soil layers (generally clays and silts) that prevent water from percolating into the ground. Seasonal wetlands also may form in areas with seasonally high groundwater tables. Dominant plant species in these wetlands can include those listed above for freshwater marshes, as well as rushes and sedges such as tall umbrella sedge (*Cyperus eragrostis*), but more commonly consist of nonnative annual hydrophytic species such as rabbitsfoot grass (*Polypogon monspeliensis*), hyssop loosestrife (*Lythrum hyssopifolium*), white sweetclover (*Melilotus albus*), and bristly ox-tongue (*Picris echioides*).

Wildlife use of seasonal wetlands in the Program Renewal Area depends largely on the duration and depth of ponding, the extent of open water, and the structure and type of emergent vegetation present. Most of the seasonal wetlands in the Program Renewal Area provide little open water, and they generally do not provide deep water. As a result, they are used primarily for winter and spring foraging by waterbirds, such as shorebirds, ducks, and geese, rather than as a year-round resource. Wetland-associated birds such as song sparrows and red-winged blackbirds will nest in these habitats where they support tall, dense emergent vegetation. A variety of finches, sparrows, and other birds that nest in nearby habitats will also use these wetlands for cover and foraging habitat. Seasonal wetlands that provide standing water for at least several months support successful breeding by amphibians such as western toads and Pacific tree frogs, while seasonal wetland swales that do not provide sufficient ponding provide only foraging habitat and moist refugia for these amphibians. In some areas, seasonal wetlands provide suitable breeding conditions for California tiger salamanders, if they hold water through May, and for California red-legged frogs, if they hold water into July. Common garter snakes and western terrestrial garter snakes forage in these wetlands for amphibian larvae.

Open Water

Program Renewal activities could impact either of the open water community types classified by the VHP (i.e., pond and reservoir). These open water habitats are permanently or semi-permanently flooded, and support less than 5 percent vegetation in emergent or submerged states. Isolated ponds, reservoirs, percolation ponds (off-stream groundwater recharge ponds), rivers, streams, and ditches, as well as tidal/intertidal habitats (discussed separately below as non-VHP community types) represent open water habitat in the Program Renewal Area.

POND

Very few naturally occurring ponds exist in the Program Renewal Area. Many human-made ponds, including old gravel excavation sites, stock ponds, or ornamental ponds associated with golf courses and parks, do occur.

Amphibian species that breed in ponds throughout the Program Renewal Area include the native Pacific tree frog and western toad, as well as the nonnative bullfrog. Northwestern pond turtles are known to occur in ponds on the Santa Teresa Golf Course and other small ponds throughout the Program Renewal Area (H. T. Harvey & Associates 1999a and 2012a, CNDDB 2024). Several nonnative turtle species have been introduced into pond habitats in the Program Renewal Area as well. California tiger salamanders are known to breed in seasonal ponds on the periphery of the Program Renewal Area where upland aestivation habitat is available and nonnative aquatic predators, such as bullfrogs, green sunfish, mosquitofish, and Louisiana red crayfish (*Procambarus clarkii*), are absent (H. T. Harvey & Associates 1999c and 2012b). California red-legged frogs are also known from ponds in a few locations on the periphery of the Program Renewal Area; however, this species is largely absent from urbanized and agricultural portions of the Valley floor (H. T. Harvey & Associates 1997). Common resident birds that occur in larger ponds throughout the Program Renewal Area include the pied-billed grebe, double-crested cormorant (*Phalacrocorax auritus*), great egret, snowy egret (*Egretta thula*), Canada goose (*Branta canadensis*), mallard, common merganser (*Mergus merganser*), American coot, and killdeer (*Charadrius vociferus*), among others. Numerous species of wintering ducks, such as the northern shoveler (*Anas clypeata*), lesser scaup (*Aythya affinis*), and bufflehead (*Bucephala clangula*) occur in these habitats during fall and winter. Shorebirds, such as the greater yellowlegs (*Tringa melanoleuca*), spotted sandpiper (*Actitis macularius*), and others, forage and roost at the edges of these habitats during migration and winter. Additionally, a variety of mammals come to ponds to drink.

The Coyote Creek Reach 1A pond along lower Coyote Creek was created and is managed specifically for waterbird use and provides habitat for numerous shorebirds, waterfowl, gulls, terns, and larger waders. Regular monitoring by the San Francisco Bay Bird Observatory of this 16-acre pond recorded more than 57 species of waterbirds, the most common of which were dowitchers (*Limnodromus spp*.), American avocets (*Recurvirostra americana*), northern shovelers, and California gulls (*Larus californicus*) (Strong 2003). Additional birds using this pond include pectoral sandpipers (*Calidris melanotos*), western sandpipers (*Calidris mauri*), and Wilson's phalaropes (*Phalaropus lobatus*), as well as large numbers of nesting American avocets, black-necked stilts (*Himantopus mexicanus*), and ducks (Strong 2003).

RESERVOIR

There are 10 reservoirs in the Program Renewal Area: Anderson, Calero, Chesbro, Coyote, Guadalupe, Lexington, Stevens Creek, Uvas, Vasona, and Almaden. These reservoirs were constructed to provide water supply and storage uses for county residents. Reservoirs have altered hydrology of downstream areas by reducing spring runoff events, dampening flood peaks and frequency, and supplying water to creeks that would normally be dry during summer months. They also retain sediment, preventing natural sediment dispersal throughout the watershed. Although no Program Renewal activities would occur in the reservoirs, these reservoirs influence the biological resources present in reaches both above and below them.

Additional water bodies in the Program Renewal Area that are mapped as reservoir by the VHP include the Parkway Lakes, Lake Cunningham, Almaden Lake, and percolation ponds along Los Gatos, Llagas, Coyote, Upper Penitencia, Stevens, and Guadalupe Creeks, the Guadalupe River, and Madrone Channel. Of these, maintenance activities are projected to occur only in Almaden Lake, which is an in-channel lake connecting Alamitos Creek with the Guadalupe River downstream.

All of the waterbird and shorebird species described under *Pond* above will also use reservoirs in the Program Renewal Area. In addition, cormorants, gulls, and pelicans exhibit movements between foraging areas at inland reservoirs in the South Bay, and ospreys (*Pandion haliaetus*), Forster's terns (*Sterna forsteri*), and Caspian terns (*Sterna caspia*) forage for fish in a number of reservoirs in the Program Renewal Area. Since the late 1990s, small heron rookeries have become established on islands in inland reservoirs in the South Bay; these herons and egrets forage largely on fish in these waterbodies.

Northwestern pond turtles are known to occur in several Valley Water reservoirs (Almaden, Calero, Chesbro, Anderson, Uvas, Stevens Creek, Lexington, etc.) (H. T. Harvey & Associates 1999a and 2012a, CNDDB 2024), and this species may occur in reservoir habitats throughout the Program Renewal Area. Several nonnative turtle species have also been introduced into reservoirs in the Program Renewal Area. Most of the fish occurring in Program Renewal Area reservoirs are nonnative; however, the native Sacramento hitch (*Lavinia exilicauda exilicauda*) has been observed in warm water impounded areas such as Anderson and Coyote reservoirs (Leidy 2007, Valley Water 2021c).

Irrigated Agriculture

Agricultural land cover types are common in the Program Renewal Area, with small remnant patches of agricultural lands occurring inside city limits in northern Santa Clara County, and larger (often actively managed) agricultural areas present in southern Santa Clara County. In addition to livestock and poultry, agricultural land uses in Santa Clara County include field crops (e.g., alfalfa, grain, pasture), bushberries, strawberries, floral crops, forest products, fruits and nuts, vegetable crops, seed crops, and nursery crops (e.g., bedding plants, ornamental trees and shrubs, Christmas trees) (Santa Clara County Department of Agriculture 2022). These land cover types occur adjacent to projected Program Renewal work areas in many locations.

ORCHARD

Orchards in the Program Renewal Area consist of farmland with cultivated fruit or nut trees (e.g., English walnut [*Juglans regia*], fruiting trees such as plums [*Prunus* spp.], and others). The understory of these areas is typically limited and maintained frequently by mowing or other methods but may consist of nonnative annual grasses or bare ground.

Orchards in the Program Renewal Area support relatively few wildlife species due to pesticide use, frequent disturbance associated with farming activities, the low stature of the crops produced in most of these areas, and the lack of structural diversity in the vegetation in these areas. Rodent control reduces the abundance of small mammals and makes these areas generally unsuitable as foraging habitat for raptors and larger mammals. Nevertheless, small numbers of California ground squirrels, valley pocket gophers, and other small mammals will occur in these areas, often along margins of fields, and raptors such as red-tailed hawks, American kestrels, and white-tailed kites will forage in orchards where these

species are present. Birds such as Brewer's blackbirds (*Euphagus cyanocephalus*), American robins, and American crows (*Corvus brachyrhynchos*) nest and forage in these orchards. A number of mammals, including the coyote, black-tailed deer, American badger, raccoon, and bobcat may move through orchards in the Program Renewal Area. However, orchards provide little cover and few food resources for carnivorous species, and most mammal movement through the Program Renewal Area is expected to occur through habitats offering more resources for these species.

VINEYARD

Vineyards in the Program Renewal Area are similar to orchards but consist of cultivated grapes (*Vitis* spp.). The understory of these areas is similarly limited and maintained frequently by mowing or other methods but may consist of nonnative annual grasses or bare ground. Wildlife use of these areas is similar to wildlife use of orchards described above; however, bird nesting in vineyards is limited due to the lack of trees as well as frequent disturbances.

AGRICULTURE DEVELOPED

Large agricultural buildings, corrals, dairies, and other agricultural infrastructure in the Program Renewal Area do not typically support substantive vegetation due to the presence of livestock and high levels of human disturbance. Wildlife use of these areas is also extremely limited due to a lack of foraging resources and vegetative cover. Species that occur in these areas include the nonnative rock pigeon (*Columba livia*), and European starling (*Sturnus vulgaris*), which may nest in agricultural buildings and other infrastructure. Native species such as the Brewer's blackbird and brown-headed cowbird (*Molothrus ater*) will also occur here, but nest in surrounding areas. Other native birds, such as the black phoebe, will nest on agricultural buildings and forage for insects (e.g., flies) where livestock are present. Nonnative mammals such as the black rat (*Rattus rattus*), house mouse, and others are common in these areas.

GRAIN, ROW-CROP, HAY AND PASTURE, DISKED/SHORT-TERM FALLOWED

The grain, row-crop, hay and pasture, disked/short-term fallowed land cover type includes managed agricultural fields that are either planted with grasses or disked or mown to maintain low vegetation stature or bare ground. Weedy plant species, such as those occurring in California annual grasslands described above, occur in these fields when they are fallow. Planted fields and pastures may support wild oats, Italian ryegrass, alfalfa (*Medicago sativa*), and others.

These fields provide habitat for wildlife species similar to that described for California annual grassland above, except that agricultural habitats are highly cultivated for specific species and regularly disturbed by farming activities. Small mammals such as valley pocket gophers, California ground squirrels, and California mice breed and forage in these fields, especially where the ground has not been recently disturbed, and they can establish burrow complexes. These small mammals provide prey for red-tailed hawks, American barn owls, grey foxes (*Urocyon cinereoargenteus*), gopher snakes, western rattlesnakes, and other predators. Birds such as Canada geese, finches, sparrows, and blackbirds will forage on seeds in these fields, and red-winged blackbirds may nest in fallow fields. However, the repeated disturbance causes these communities to change frequently, and the animal communities present will depend upon the management of individual fields.

Developed

Developed land cover types occur within city limits and in rural portions of the Program Renewal Area. The land cover types described below occur adjacent to projected Program Renewal work areas in many locations. Maintenance activities are expected to avoid the *landfill* land cover type in the Program Renewal Area, as this land cover type does not occur adjacent to any projected work areas. Thus, this land cover type is not described here (although a detailed description can be found in Section 3.3.5 of the VHP).

Santa Clara County is extensively urbanized and contains 15 cities as well as 1.9 million residents (County of Santa Clara 2024). It is a major employment center, providing more than 25 percent of all jobs in the Bay Area (Vital Signs 2024).

Urban-Suburban

Urban-suburban areas include permanent structures, paved and impermeable surfaces, and associated landscape vegetation. Landscaped areas are planted with ornamental trees, shrubs and groundcovers common to the region.

The urban-suburban areas within the Program Renewal Area serve as wildlife habitat only in a very limited capacity, and most wildlife species that occur in these areas are tolerant of frequent human disturbances. Species that use these areas include the nonnative European starling, rock pigeon, house mouse, and Norway rat, as well as the native raccoon and striped skunk. Reptiles such as western fence lizards and gopher snakes may bask on road or parking lot surfaces in order to raise their body temperature. A variety of birds, including the Anna's hummingbird, California towhee, bushtit, chestnut-backed chickadee, and California scrub-jay will nest and forage in landscape vegetation. In addition, the eaves and corners of buildings and bridges within the Program Renewal Area provide attractive nesting sites for black phoebes and cliff swallows (*Petrochelidon pyrrhonota*). Additionally, large nonnative trees provide potential nesting sites for raptors, such as Cooper's hawks.

Rural-Residential

Rural residential are similar to urban-suburban areas, but structures are present at lower densities and rural areas are typically surrounded by large areas native or nonnative habitat, or agricultural lands. Vegetation in these areas is similar to that described for urban-suburban and agricultural areas above.

Wildlife use of rural-residential areas is similar to that described for urban-suburban areas and agricultural developed areas above. However, buildings in rural-residential areas are more likely to provide potential day-roosting or night-roosting habitat for crevice-roosting bats such as the California myotis, Yuma myotis, Mexican free-tailed bat, and big brown bat due to the presence of surrounding open lands that support abundant foraging resources (i.e., invertebrate prey). American barn owls may also nest and roost in trees and structures in rural-residential areas.

Golf Courses/Urban Parks

Vegetation within golf courses/urban parks in the Program Renewal Area is similar to the landscaped vegetation present in urban-suburban areas, described above. However, these areas (especially lawns) are much more extensive within golf courses and urban parks and are often associated with water features such as fountains or artificial ponds, as well as

mature trees such as locally nonnative coast redwoods (*Sequoia sempervirens*) and nonnative London plane trees (*Platanus* x *acerifolia*).

Wildlife species that occur in golf courses and urban parks in the Program Renewal Area are similar to those present within urban-suburban areas. However, due to their larger extent, parks provide habitat for greater densities and diversities of these species. In addition, small numbers of waterbirds such as mallards are often attracted to artificial ponds, and flocks of Canada geese are often present within large lawn areas. Mature trees in these areas are more likely to provide nesting sites for common raptors, such as red-shouldered hawks, and roosting sites for common bats, such as the California myotis.

Ornamental Woodland

Ornamental woodlands may be present in urban and rural areas throughout the Program Renewal Area. These woodlands consist of nonnative trees, such as coast redwoods and eucalyptus. Understory vegetation within these areas can vary, and is typically similar surrounding community types (e.g., urban-suburban, California annual grassland, etc.).

Wildlife use of ornamental woodland areas is similar to that described for mature trees in golf courses/urban parks above. In addition, where stands of eucalyptus trees are present along migratory pathways (e.g., near the San Francisco Bay or along major stream courses on the Valley floor), migrants such as yellow-rumped warblers (*Setophaga coronata*) and ruby-crowned kinglets (*Regulus calendula*) often forage for insects in these trees.

Barren

Barren areas include aggregate facilities and mine tailings. These areas do not support vegetative communities or provide valuable habitat for wildlife species. Wildlife species occurring in adjacent developed areas may use barren areas opportunistically or move through these areas when traveling in between surrounding habitats.

Tidal and Intertidal Habitats (Non-VHP)

The Program Renewal Area extends outside of VHP-covered areas in northern Santa Clara County, into tidal and intertidal habitats associated with the San Francisco Bay. Tidal and intertidal habitats that could be impacted by Program Renewal activities are described below.

Tidal Salt Marsh

Tidal salt marsh habitat is located along the lower reaches of Program Renewal Area creeks that enter the San Francisco Bay. This habitat is influenced by tidal and salinity fluctuations, and typically consists of three zones: low marsh located below mean high water dominated by cordgrass (*Spartina* spp.), middle marsh located above mean high water dominated by pickleweed (*Salicornia* spp.), and a transitional high-marsh zone with a mixture of pickleweed and other moderately halophytic species that can tolerate occasional high tides. Halophytic plant species commonly found in the middle marsh zone and in less disturbed areas of the transitional high-marsh zone include alkali heath (*Frankenia salina*), saltgrass (*Distichlis spicata*), saltmarsh dodder (*Cuscuta salina*), spearscale (*Atriplex triangularis*), and marsh gumplant (*Grindelia stricta* var. *angustifolia*).

Within the Program Renewal Area, high marsh habitat often extends upwards along levee banks in a disturbed ecotone that contains native marsh species as well as ruderal, nonnative,

salt-tolerant species such as iceplant (*Mesembryanthemum nodiflorum*), New Zealand spinach (*Tetragonia tetragonioides*), Russian thistle (*Salsola soda*), and Australian saltbush (*Atriplex semibaccata*), as well as perennial pepperweed (*Lepidium latifolium*). Differences in transitional, pickleweed, and cordgrass salt marsh habitat types affect wildlife use and sedimentation in the sloughs and channels draining into the San Francisco Bay.

Two species of cordgrass are found in tidal marshes of the South Bay: native Pacific cordgrass (*Spartina foliosa*) and nonnative smooth cordgrass (*Spartina alterniflora*). Smooth cordgrass, which is native to the east coast of North America, easily hybridizes with Pacific cordgrass, and this can quickly lead to the widespread distribution of hybrid individuals within South Bay tidal marsh habitats. Smooth cordgrass, hybrid cordgrass, and perennial pepperweed are the predominant invasive plant species found in tidal salt marshes in the Program Renewal Area. Such invasions not only affect the food web, but these nonnative species also extend lower into channels compared to native Pacific cordgrass. This can result in the loss of channels to vegetation encroachment and subsequent sedimentation (PWA and H.T. Harvey & Associates 2006), as well as loss of mudflats that are valuable to wildlife and native estuarine aquatic organisms. The Bay-wide Invasive *Spartina* Program Renewal, funded by the California Coastal Conservancy, has been successful at minimizing the extent of hybrid *Spartina* in South Bay marshes. Small populations of hybrid *Spartina* still exist in the South Bay; however, the Invasive *Spartina* Program Renewal is continuing to monitor and control this plant Bay-wide with the ultimate goal of eradication.

Tidal marshes in the Program Renewal Area are remnants of what were formerly much larger marshes that have been filled and developed and/or converted to managed ponds. These marshes support high densities of wildlife species, including several species that are endemic to the San Francisco Bay. Based on trapping studies that have been conducted in a number of areas in the South Bay, the California vole is often the most common small mammal species found in these tidal marshes, but the state and federally endangered salt marsh harvest mouse has been recorded in pickleweed-dominated marshes in the Program Renewal Area such as in New Chicago Marsh, Nine-Par Marsh, and the Coyote Creek Salt Marsh Harvest Mouse Management Area. The salt marsh wandering shrew (*Sorex vagrans halicoetes*), a California species of special concern, has been recorded in New Chicago Marsh and other areas as well.

The state and federally endangered California Ridgway's rail is found in tidal marsh habitats (e.g., at the Palo Alto Baylands, Alviso Slough, Guadalupe Slough, and Coyote Slough) in the lower marsh zone where numerous small tidal channels are present, and this species nests in cordgrass (native and nonnative), dense stands of pickleweed, and marsh gumplant. The state endangered California black rail also nests and winters in tidal brackish and salt marshes in the Program Renewal Area in small numbers. Alameda song sparrows (*Melospiza melodia pusillula*) and Bryant's savannah sparrows (*Passerculus sandwichensis alaudinus*), both California species of special concern, also nest in tidal marshes in the Program Renewal Area. Alameda song sparrows prefer dense herbaceous vegetation wherever it occurs throughout the tidal marsh, while Bryant's savannah sparrows nest in shorter vegetation such as pickleweed and high transitional marshes in upland ecotones. Other avian species that nest in tidal marshes in the Program Renewal Area include several species of ducks, herons, and egrets (Gill 1977). Shorebirds, swallows, blackbirds, and other avian species roost and forage, often in large numbers, in tidal marsh habitats in the South Bay, but most do not breed in these areas.

TIDAL BRACKISH MARSH

Tidal brackish marsh habitat occurs in the upper intertidal reaches of sloughs and creeks draining into the San Francisco Bay in the Program Renewal Area, where vegetation is subject to tidal inundation diluted by freshwater flows from upstream. This habitat type is dominated by emergent, vascular plant species adapted to intermediate (brackish) water salinities includes short bulrushes such as alkali bulrush (*Scirpus robustus*) and saltmarsh bulrush (*Scirpus maritimus*).

Wildlife communities in tidal brackish marshes are largely similar to those in tidal salt marshes described above, with the potential for additional species that prefer freshwater marshes. Marsh wrens, red-winged blackbirds, song sparrows, and San Francisco common yellowthroats (*Geothlypis trichas sinuosa*) are common breeders in brackish marshes. Salt marsh species, such as the salt marsh harvest mouse and California Ridgway's rail, occur rarely in this habitat, but California black rails will occur here when present. Many additional tidal salt marsh and freshwater marsh-associated bird species may forage in these areas, including ducks, herons, egrets, sparrows, larger shorebirds, and swallows.

INTERTIDAL AREAS

Mudflats in the Program Renewal Area occur in intertidal areas from below mean lower low water to mean tide level. These areas consist of expanses of unvegetated mud located just beyond the lower edge of tidal wetlands, and between the low-flow channel and edge of wetlands, within the tidal reaches of channels that drain to the San Francisco Bay. This habitat often supports less than 10 percent cover of emergent vegetation, typically in the form of cordgrass and annual pickleweed (*Salicornia europaea*) that is too sparse to map as distinct salt marsh habitat. Mudflats generally are covered by shallow water during high tides and are exposed during low tides. These are dynamic depositional features, changing in extent and location depending on erosion and deposition of sediments. Narrow mudflats occur along the edges of the upper reaches of tidal sloughs, while much more extensive flats are present at the mouths of major sloughs. For example, a large expanse of mudflat habitat exists at the mouths of Alviso Slough and Guadalupe Slough, while small areas of mudflat at the upper end of Coyote Slough are surrounded by freshwater marsh.

Aquatic intertidal habitat in the Program Renewal Area is characterized by strong tidal estuarine influence and is too deep at high tides to support salt marsh and cordgrass species. Depending on tidal action, such areas can range from relatively clear to extremely turbid. These habitats are more benthic in nature than mudflats and are not exposed, even during very low tides.

Intertidal areas support high productivity due to the accumulation of detritus from tidal marshes, phytoplankton that settles in the water column, and algae and diatoms growing on mudflats (Warwick and Price 1975, Life Science 2003). Crustaceans, polychaete worms, gastropod and bivalve mollusks, and other invertebrates live on or just below the surface of the mud and feed on these resources. During daily high tides, fish school over the mudflats to feed on these invertebrates. As the tide recedes and the flats emerge, fish retreat to subtidal areas while considerable numbers of birds, primarily shorebirds, leave their high-tide roosts and feed on the exposed mudflats.

Aquatic intertidal habitats within the Program Renewal Area support a wide range of estuarine fish species, which often occur seasonally based on spawning and migration times.

Species such as the southern green sturgeon, white sturgeon, and San Francisco Bay-Delta longfin smelt can be found in the intertidal habitats of Alviso Slough and Coyote Creek (Otolith & Geochemistry Lab 2023). Additionally, these habitats are used seasonally as migration corridors by salmonids and lamprey.

Due to their high productivity, these mudflats are primarily responsible for the importance of the San Francisco Bay to West Coast shorebird populations. Other bird species, such as gulls and some dabbling ducks, forage on the exposed mudflats as well. Because benthic invertebrates often recede deeper into the mud as the tidal elevation drops, large concentrations of foraging birds typically occur right at the edge of the receding or rising tideline. Additional shorebirds, gulls, and large waders (e.g., herons and egrets) feed in smaller numbers on exposed mudflats farther inland along sloughs and channels. Smaller channels in brackish and salt marshes are favored foraging areas for the California Ridgway's rail. A number of shorebirds, gulls, terns, and ducks, as well as American white pelicans (*Pelecanus erythrorhynchos*), often use exposed mudflats as roosting or loafing areas, as do Pacific harbor seals. When the tides rise, most of these birds return to alternate roosting areas in salt ponds or other nearby habitats.

TIDAL AQUATIC

Aquatic habitat is present within the subtidal portions of tidal channels in the Program Renewal Area; these areas are subject to ebb and flow tides. No emergent vegetation typically occurs within the subtidal aquatic habitat, though this habitat will occur directly adjacent to the tidal marsh habitats.

Tidal waters support a variety of benthic invertebrates, pelagic invertebrates, and fish species. Within tidal reaches of the Program Renewal Area, the benthic assemblage includes species that are tolerant of variable salinities and temperatures such as oligochaete worms (Annelida), midge larvae (Chironomidae), and cranefly larvae (Tipulidae). Tidal waters within the Program Renewal Area support a wide range of fish species, including freshwater and estuarine species, which often occur seasonally based on spawning and migration times. Species such as the white sturgeon, topsmelt (*Atherinops affinis*), northern anchovy, starry flounder, leopard shark, Pacific staghorn sculpin (*Leptocottus armatus*), longfin smelt, and three-spined stickleback (*Gasterosteus aculeatus*) are commonly found in tidal waters within the Program Renewal Area (Otolith and Geochemistry Lab 2023, 2024). Nonnative fish species such as striped bass, Shimofuri goby (*Tridentiger bifasciatus*), American shad (*Alosa sapidissima*), threadfin shad, common carp, and yellowfin goby (*Acanthogobius flavimanus*) also occur here (Otolith and Geochemistry Lab 2023, 2024). Several tidal sloughs in the Program Renewal Area provides migratory corridors for the Pacific lamprey as well as adult and juvenile salmonids, including the CCC steelhead and Central Valley fall-run Chinook salmon.

Common waterbirds such as mallards, American coots, and gadwall (*Anas strepera*) forage within sloughs in the Program Renewal Area, while wading birds such as herons and egrets forage along the shoreline. Diving ducks and other waterbirds are typically present in low numbers in these habitats due to the narrow nature of the channels and high levels of human disturbance (where adjacent developments are present).

Invasive Species and Pathogens

Invasive and Nonnative Nuisance Species

For over two centuries, humans have brought nonnative plants and animals into the Program Renewal Area, either accidentally (e.g., as stowaways in cargo shipments) or intentionally (e.g., cultivated plants and released pets), and many of these species have now been introduced into the wild. Such species that cause harm and, once established, spread quickly from their point of introduction are often called "invasive" species. Additional nonnative species that are not necessarily "invasive" can pose issues as well and are often referred to as "nuisance" species. Lists identifying invasive species in California are available from the California Invasive Plant Council (2024) and the CDFW (2024), and a list of invasive plant species targeted by Valley Water maintenance activities is maintained and updated as needed by Valley Water.

Invasive and nonnative nuisance species can threaten the diversity and abundance of native species through predation, competition for resources, transmission of disease, parasitism, and physical or chemical alteration of habitats. Their effects on natural communities may also lead to direct effects on human activities, such as clogging waterways and water delivery systems, weakening flood protection structures, damaging crops, and diminishing sport fish populations.

As described previously, invasive plant species such as perennial pepperweed and giant reed are common in the Program Renewal Area. Additional common and widespread invasive plant species include yellow star-thistle (*Centaurea solstitialis*), eucalyptus, tree of heaven (*Ailanthus altissima*), broom species (*Ulex europaeus*, *Spartium junceum*, and *Cystisus scoparius*), Russian thistle (*Salsola tragus*), poison hemlock (*Conium maculatum*), fennel (*Foeniculum vulgare*), English ivy, pampas grass (*Cortaderia selloana*), Harding grass (*Phalaris aquatica*), Himalayan blackberry (*Rubus armeniacus*), and stinkwort (*Dittrichia graveolens*). These plants easily colonize disturbed areas or substrate that is not otherwise dominated by native plants.

Introduced animal species are also widespread in the Program Renewal Area. Several of the more common introduced/invasive wildlife and fish species present, or with a high potential to be introduced, are discussed in the paragraphs below.

As described above, many non-native fish have been introduced to the Program Renewal Area. Some nonnative species compete with or prey upon native and special-status fish. Several nonnative species occur within the Program Renewal Area as a result of historical stocking for angling purposes; stocking by anglers for bait fish; or incidental transfer through vessels, domestic animals, and other anthropogenic activities. Mosquitofish have been introduced throughout the world, including Santa Clara County, to control mosquito populations. Such introductions have been shown to have negative effects on amphibians in experimental studies, including decreased survival of larval Pacific tree frogs (Goodsell and Kats 1999) and California newts (Gamradt and Kats 1996), as well as tail injury, reduced metamorph size, and altered activity patterns of larval California red-legged frogs (Lawler et al. 1999). Piscivorous nonnative fish species may prey upon native and/or special-status fish or compete for resources, affecting growth and condition factor of natives (Swales 2006). The nonnative fish species that occur within the study area are generally more tolerant of warm water than many of the native fish species.

New Zealand mud snails (*Potamopyrgus antipodarum*), which reproduce rapidly and can crowd out the native invertebrates that aquatic wildlife depend on for survival, were first discovered in California in 2000 in the Owens River in Mono County (California Department of Fish and Game 2008d). In New Zealand, populations likely are kept in check naturally by a native parasite that is not present in North America. In the absence of such natural predators or parasites, population densities can reach nearly 1 million snails per square meter, and the species is parthenogenic (i.e., able to start a new population from only one snail) (California Department of Fish and Game 2008d). Biologists do not believe that the species can be eradicated once established (California Department of Fish and Game 2008d). This species has been recorded in the Program Renewal Area in streams discharging into the San Francisco Bay (USGS 2024).

The American bullfrog has been accidentally and intentionally introduced (e.g., for food in the 1920s by commercial frog farmers) throughout the world and is now established throughout most of the western United States, including the Program Renewal Area (California Herps 2024). The species' large size, mobility, generalized eating habits (their prey includes native amphibians as well as other aquatic and riparian vertebrates [Graber 1996]), and aggressive behavior have made bullfrogs extremely successful invaders and a threat to biodiversity (AmphibiaWeb 2024). Nonnative turtles, particularly the red-eared slider, have also been introduced in the Program Renewal Area, and these turtles compete with the native northwestern pond turtle for high-quality basking sites.

Nonnative mammal species such as feral cats, red foxes, Norway rats, and muskrats (*Ondatra zibethicus*) are known to occur in the Program Renewal Area and are significant predators of native birds. Feral pigs (*Sus scrota*) (also called wild boars), which are present outside of the most heavily urbanized portions of the Program Renewal Area, can damage natural habitats through herbivory, rooting, wallowing, and soil compaction.

Pathogens

Plant and animal pathogens, which can be spread by human activities, can also adversely affect native species and communities. *Phytophthora* is a taxonomic group of microscopic oomycetes (also known as water molds) that is known to occur throughout much of the San Francisco Bay Area and the State of California. More than 170 *Phytophthora* species have been described, and almost all are known to be pathogenic to plants. Plant diseases caused by *Phytophthora* include root rots, stem cankers, and fruit and leaf blights. *Phytophthora* is transmitted through the movement of contaminated soil and water, and some species are known to be airborne. Movement of contaminated soil, water, and plant material are primary pathways for spreading infection. Areas with woody vegetation and susceptible host plants are at greatest risk of being infested. Once introduced into native habitats, *Phytophthora* persists in soil and infected host roots and is very difficult to impossible to eradicate (Swiecki and Bernhardt 2017). Spread of contamination could result in long-term impairment of the health of native vegetation, resulting in declines in abundance of special-status plant species and sensitive communities (Swiecki 2020).

Other pathogens can adversely affect animals. Ranaviruses can cause impaired health or mortality of amphibians, turtles, and fish. These viruses are transmitted through direct contact between infected and uninfected animals, contaminated water, or predation (e.g., ingestion of infected animals). Chytrid fungus is a water-borne fungus that can impair the health of amphibians. There are approximately 1,000 chytrid species, and *Batrachochytrium*

dendrobatidis can infect the skin of amphibians (Longcore et al. 1999). Infected individuals may develop chytridiomycosis, a thickening of the skin that inhibits amphibians' ability to absorb water and electrolytes, eventually causing death (Voyles et al. 2009). Chytridiomycosis outbreaks have been linked to substantial declines in some amphibian populations (Berger et al. 1998, Fisher et al. 2009). Chytrid fungus may be spread by the dispersal of infection by translocation of zoospores by other animals or humans (including equipment and machinery) among waterbodies.

Shell disease could affect the health of northwestern pond turtles. Caused by fungal or bacterial infections, shell disease can result in lesions or irregularities in turtles' shells. This disease is known best in captive or domestic turtles, but there is concern that it could affect wild turtles, such as northwestern pond turtles (Washington Department of Fish and Wildlife 2016).

Special-Status Plant and Animal Species

CEQA requires assessment of the effects of a project on species that are protected by state, federal, or local governments as "threatened, rare, or endangered"; such species are typically described as "special-status species." For the purpose of the environmental review of the Program Renewal, special-status species of plants and animals have been defined as described below. Impacts on these species are regulated by some of the federal and state laws and regulations described under Section 3.4.2, "Regulatory Setting," above.

Special-Status Plants

For purposes of this analysis, "special-status" plants are considered plant species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- Listed under CESA as threatened, endangered, rare, or a candidate species;
- Designated by the CNPS as CRPR 1A, 1B, 2, 3, or 4; and/or
- Covered under the VHP amendment in progress.

The CNPS (2024) and CNDDB (2024) identify 97 special-status plant species as potentially occurring within one of the 34 USGS quadrangles in which the Program Renewal Area falls (for CNPS) or within Santa Clara County (for CNDDB). In addition, brittlescale (*Atriplex depressa*) was considered because it was included in the Stream Maintenance Program 2013–2023 (SMP-2) EIR, and coast rockcress (*Arabis blepharophylla*), small spikerush (*Eleocharis parvula*), and prostrate vernal pool navarretia (*Navarretia prostrata*) were added to the list of potentially occurring special-status plants due to known records of these species in the Program Renewal Area and/or in nearby areas in similar habitats. For the purpose of this assessment, all 101 special-status plants were analyzed for their potential to occur in the Program Renewal Area.

Of the 101 potentially occurring special-status plant species (including List 4 species), the vast majority were determined to be absent from the Program Renewal Area for at least one of the following reasons: (1) absence of suitable habitat types, (2) lack of specific microhabitat or edaphic requirements, (3) the elevation range of the species is outside of the range of the Program Renewal Area, and/or (4) the Program Renewal Area is outside the

species' known geographic range and/or there are no nearby extant records (*Appendix E*). All remaining special-status plants with the potential to occur in the Program Renewal Area are addressed in detail in Table 3.4-3 with the exception of CNPS List 4 species, which are only included in Table 3.4-3 if (1) the only known populations occur in the vicinity of Santa Clara County, (2) the species has been recorded by the CNPS as occurring in no more than two counties in California (i.e., it has a very limited distribution), (3) populations in the Program Renewal Area are on the periphery of the species' range or in areas where the taxon is especially uncommon or has sustained heavy losses, (4) the type locality occurs in the Program Renewal Area, or (5) populations exhibit unusual morphology or occur on unusual substrates. Three CNPS List 4 species meet the above criteria because of their restricted range: Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*), small spikerush, and Satan's goldenbush (*Isocoma menziesii* var. *diabolica*). The remaining List 4 species are listed in *Appendix E*.

Table 3.4-3 below provides detail for 32 special-status plant species for which suitable habitat, edaphic requirements, and elevation range are present in the Program Renewal Area. Of these, California seablite (*Suaeda californica*) and bent-flowered fiddleneck (*Amsinckia lunaris*) are known to occur or may occur in the Program Renewal Area; however, occurrences of these species are extremely localized, and they are not known to occur within or adjacent to proposed work areas. Thus, impacts of maintenance activities on these species are not anticipated. An additional 14 species are determined to be absent from Program Renewal work areas because they are associated with serpentine habitats, and the Program Renewal will avoid impacts within these areas. Another 16 special-status plant species could occur in Program Renewal work areas and have at least a minimal potential to be affected by maintenance activities. Of these 16 species, Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Santa Clara red ribbons, San Francisco collinsia (*Collinsia multicolor*), western leatherwood (*Dirca occidentalis*), and Hall's bush-mallow have a low to moderate potential to occur in work areas where they may be impacted, while Anderson's manzanita (*Arctostaphylos andersonii*), alkali milk-vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *palustris*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), small spikerush, Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*), Satan's goldenbush, arcuate bush-mallow (*Malacothamnus arcuatus*), prostrate vernal pool navarretia (*Navarretia prostrata*), and saline clover (*Trifolium hydrophilum*) have a very low potential to occur in work areas, though occurrence cannot be eliminated.

Table 3.4-3. Special-Status Plant Species with Potential to Occur in the Program Renewal Area and Program Renewal Work Areas

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Federal or State Endangered and Threatened Plant Species			
Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*)	FE, ST, CRPR 1B.2, VHP	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Documented occurrences in the Program Renewal Area are present on Coyote Ridge between Anderson Reservoir and U.S. Highway 101. Potential habitat includes serpentine bunchgrass grasslands on the northern portion of Coyote Ridge and portions of the Santa Teresa Hills. However, Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Coyote ceanothus (*Ceanothus ferrisiae*)	FE, CRPR 1B.1, VHP	Chaparral, coastal scrub, valley and foothill grassland on serpentinite/ serpentine bunchgrass grassland and mixed serpentine chaparral	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Known to occur in the Anderson Reservoir area, south of Anderson Dam, and on the southern portion of Coyote Ridge between Anderson Dam and Kirby Canyon Landfill. Another population is present west of Hale Avenue and north of Llagas Road. Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area, away from known locations. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Santa Clara Valley dudleya (*Dudleya setchellii*)	FE, CRPR 1B.1, VHP	Cismontane woodland, valley and foothill grassland on serpentinite, rocky/ serpentine rock outcrop	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Occurs in numerous locations in the Program Renewal Area on serpentine rock outcrops, including in the Santa Teresa Hills, on Communications Hill, near Monterey Road/Senter Road, on Coyote Ridge, near Anderson Reservoir, and in the upper Llagas Creek watershed. Although many populations have been documented in the Program Renewal Area, much of the suitable habitat has not been surveyed as it occurs on private lands. Potential habitat occurs elsewhere in the Program Renewal Area on serpentine soils in the lower foothills of the Santa Cruz Mountains and the Diablo Range. However, Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*)	FE, CRPR 1B.1, VHP	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** The Program Renewal Area encompasses the majority of the Metcalf Canyon jewel-flower's range. Some uncertainty exists around the taxonomic treatment of this species and most beautiful jewel-flower. Nevertheless, this species occurs on serpentine soils on Coyote Ridge, near Anderson Reservoir, on Communications Hill, and near Llagas Road in Morgan Hill. Potentially suitable habitat is present elsewhere in the Program Renewal Area where serpentine grassland occurs. Valley Water surveys conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
California seablite (*Suaeda californica*)	FE, CRPR 1B.1	Coastal salt marshes from sea level to 49 feet	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** CNDDB records include an occurrence of eight individuals, recorded in 1971, in Harbor Marsh at the Palo Alto Baylands, within the Program Renewal Area. However, a recent review of that occurrence by the USFWS concluded that it is "likely extirpated" (USFWS 2010). All known remaining populations in the South San Francisco Bay area except one are restoration populations, and the locations of all remaining populations are well known (and outside the Program Renewal Area). Therefore, this species is absent from Program Renewal work areas.
CNPS-Listed Plant Species			
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	CRPR 1B.2	Cismontane woodland, valley and foothill grassland on clay, volcanic soils, often serpentinite/oak woodland	**Unlikely to Occur in Program Renewal Area, Absent from Program Renewal Work Areas.** No populations are described as occurring in the Program Renewal Area. The closest known population occurs near Page Mill Road in Palo Alto. Suitable habitat exists in the Program Renewal Area in oak woodland habitats, such as those in the Santa Teresa and Almaden Hills. Thus, there is a possibility (albeit low) that the species occurs in woodlands or on serpentine substrates along creeks near Program Renewal work sites. However, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland/oak woodland and chaparral	**May be Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Known to occur in Santa Clara County near Alma Bridge Road and on Kinkaid Road 1.1 miles north of Mt. Hamilton Road. No suitable habitat is present in Program Renewal work areas, as such habitat occurs in higher-elevation areas with more natural chaparral and oak woodland habitats above Lexington Reservoir, near the Almaden Hills, and near Llagas Creek. Therefore, this species is absent from Program Renewal work areas.

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Anderson's manzanita (*Arctostaphylos andersonii*)	CRPR 1B.2	Broadleaved upland forest, chaparral, and North Coast coniferous forest habitats (openings) at elevations of 197 to 2,395 feet	**Unlikely to Occur in Program Renewal Area or Program Renewal Work Areas.** Not known to occur within the Program Renewal Area, but a number of documented occurrences are present in Santa Clara County above 1,000 feet in the Santa Cruz mountains. Suitable habitat for this species is present in the foothills of the Santa Cruz Mountains and Diablo Range in the eastern and western portions of the Program Renewal Area, and the species is known to occur at elevations as low as 195 feet. Thus, there is some possibility (albeit low) that individuals may occur in suitable habitat along Program Renewal streams in these foothills. However, no Program Renewal activities are projected within areas where this species is likely to occur.
Alkali milk-vetch (*Astragalus tener* var. *tener*)	CRPR 1B.2	Playas, clay soils supporting valley and foothill grasslands, and alkaline, vernal pools	**Unlikely to Occur in Program Renewal Area and Program Renewal Work Areas.** There are no recent records of this species in the far South Bay, and this species is likely absent from the Program Renewal Area. However, there is at least a low potential for this species to occur in tidal salt marshes along Coyote Slough within the Program Renewal Area, and Program Renewal activities are projected in areas providing suitable habitat.
Brittlescale (*Atriplex depressa*)	CRPR 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools on alkaline, clay soils/California annual grassland habitat on alkaline soil, seasonal wetlands	**Unlikely to Occur in Program Renewal Area and Program Renewal Work Areas.** No known occurrences exist in the Program Renewal Area. The closest known occurrence is north of Mud Slough in the Don Edwards San Francisco Bay National Wildlife Refuge in Alameda County, in alkali grasslands with eroded soils. Although no occurrences are present in the Program Renewal Area, suitable habitat is present on low-lying moist, alkaline, clay soils near the San Francisco Bay, where the species may be present, and Program Renewal activities are projected in areas providing suitable habitat.

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Big-scale balsamroot (*Balsamorhiza macrolepis*)	CRPR 1B.2	Chaparral, cismontane woodland, valley and foothill grassland sometimes in serpentinite/serpentine bunchgrass grassland, mixed serpentine chaparral, and oak woodland	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Known to occur near the northern portion of Coyote Ridge and at Coyote Lake-Harvey Bear Ranch County Park. Additional suitable habitat in the Program Renewal Area is present on serpentine soils such as those along Coyote Ridge, within the Santa Teresa Hills, near Anderson Reservoir, west of Coyote Valley, on Communications Hill, and within the area of serpentine north of Alum Rock Park. However, Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Pink creamsacs (*Castilleja rubicundula* var. *rubicundula*)	CRPR 1B.2	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland on serpentinite/oak woodland, serpentine bunchgrass grassland	**Unlikely to Occur in Program Renewal Area, Absent from Program Renewal Work Areas.** This species was documented in 2016 above the Coyote-Alamitos Canal near the historical Bernal House, and there is a historical record from Uvas Road/Llagas Creek upstream of Chesbro Reservoir in the Program Renewal Area. Additional suitable habitat in the Program Renewal Area is present on serpentine soils such as those along Coyote Ridge, within the Santa Teresa Hills, near Anderson Reservoir, west of Coyote Valley, on Communications Hill, and within the area of serpentine north of Alum Rock Park. However, Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	CRPR 1B.1	Valley and foothill grassland (alkaline)/ California annual grassland habitat on alkaline soils	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Known to occur in the Program Renewal Area at Shoreline Park in Mountain View, Stevens Creek Shoreline Open Space Preserve, Moffett Federal Airfield, Sunnyvale Baylands Park, grasslands in Alviso, and along Wrigley Creek in Milpitas. May occur in disturbed areas on alkaline soils and could occur along Program Renewal streams in the northern portion of the Program Renewal Area near San Francisco Bay, within disturbed California annual grasslands located near seasonally wet areas.

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Mt. Hamilton thistle (*Cirsium fontinale* var. *campylon*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland, and valley and foothill grassland in serpentinite seeps/ serpentine seeps	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Numerous recorded populations are present in the Program Renewal Area. This species is found near the Almaden Calero Canal, Coyote Canal, Coyote Canal Extension, Silver Creek, Metcalf Canyon, Anderson Dam spillway, Coyote Creek tributaries, springs east of Coyote Creek, drainages between Kirby Canyon landfill, and Coyote Creek golf course, drainage near Almaden Research Center, north of Calero Reservoir in a tributary to Arroyo Creek, and other locations. Suitable habitat is present elsewhere in the Program Renewal Area on mesic serpentine habitat, such as along seeps and swales throughout the foothills from Silver Creek Hills south to Morgan Hill along the Diablo Range and from Sierra Azul Open Space Preserve to Gilroy along the Santa Cruz Mountains. However, Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*)	CRPR 4.3	Chaparral, cismontane woodland/ chaparral, oak woodland; slopes near drainages	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** This species has a narrow endemic range that has been reduced to Santa Clara and Alameda Counties. Several documented occurrences in Santa Clara County are located below 1,000 feet including at Rancho San Antonio County Park, Stevens Creek County Park, Sierra Vista Open Space Preserve, and Sierra Azul Open Space Preserve. Suitable habitat exists elsewhere in the Program Renewal Area in chaparral and oak woodland habitats in the foothills of the Santa Cruz Mountains and the Diablo Range. Thus, some potential exists for the species to occur in or near Program Renewal work sites within suitable habitat.
San Francisco collinsia (*Collinsia multicolor*)	CRPR 1B.2	Closed-cone coniferous forest, coastal scrub, sometimes serpentinite	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Within Santa Clara County, a known occurrence of this species is located within the Program Renewal Area on the shoreline of Anderson Reservoir, and this species was present, at least historically, in Almaden/Quicksilver County Park outside of the Program Renewal Area. Although Program Renewal activities will avoid serpentine habitat areas, the majority of occurrences are not located on serpentine soils. Thus, some potential exists for this species to occur in or near Program Renewal work sites within suitable habitat.
Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *palustris*)	CRPR 1B.2	Salt marshes, particularly at salt pan edges with occasional tidal inundation	**Unlikely to Occur in Program Renewal Area and Program Renewal Work Areas.** There are no recent records of this species in the far South Bay, and this species is likely absent from the Program Renewal Area. However, there is at least a low potential for this species to occur in tidal salt marshes along Coyote Slough within the Program Renewal Area, and Program Renewal activities are projected in areas providing suitable habitat.

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*)	CRPR 1B.2	Found in chaparral and cismontane woodland habitats at elevations of approximately 760–3,615 feet	**May be Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** The species inhabits a small endemic range that covers the mid and upper elevations of the inner Coast Ranges in the San Francisco Bay Area south towards Mount Hamilton. No known occurrences of this species are present in the Program Renewal Area; however, potential habitat occurs toward the upper elevations of the Program Renewal Area in the Diablo Range, in wet, boggy meadows, canyons, and chaparral openings. Due to the lack of known occurrences in the Program Renewal Area, this species is unlikely to occur along Program Renewal streams.
Western leatherwood (*Dirca occidentalis*)	CRPR 1B.2	Mesic broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland habitats at elevations of approximately 164–1,296 feet	**May be Present in Program Renewal Area and in Program Renewal Work Areas.** Known to occur in the northeastern portion of the Program Renewal Area at Rancho San Antonio County Park and Foothills Nature Preserve. Suitable habitat occurs in the Program Renewal Area in the foothills of the Santa Cruz Mountains from Los Altos Hills to Cupertino. Some potential exists for the species to occur in or near Program Renewal work sites within suitable habitat.
Small spikerush (*Eleocharis parvula*)	CRPR 4.3	Coastal salt marsh	**Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** An occurrence of this species is known from brackish salt marsh habitat in the Alviso area. Suitable habitat for this species is present in salt marshes within the Program Renewal Area; however, due to this species' limited distribution in Santa Clara County, the likelihood of occurrence is relatively low.
Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)	CRPR 1B.1	Vernal pools/California annual grassland habitat on alkaline soil, seasonal wetland	**Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** Several historical occurrences of the species have been reported in the Program Renewal Area. However, all occurrences in the Program Renewal Area vicinity have been extirpated by development, except one located in the vicinity of San Felipe Lake along Highway 152 east of Gilroy (where no Program Renewal activities are projected). Suitable habitat may be present in alkaline depressions or roadside ditches along San Francisco Bay or in the vicinity of Gilroy and San Martin; however, due to the species' limited distribution in the Program Renewal Area, the likelihood of occurrence is relatively low.
Common Name (Scientific Name)	**Status [1, 2, 3]**	**Habitat Association**	**Potential to Occur**

Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B.2, VHP	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, often in serpentinite/oak woodland, serpentine bunchgrass grassland	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Known to occur on Coyote Ridge, south of Anderson Dam, at Coyote Valley Open Space Preserve, and at Almaden Quicksilver County Park, and was formerly known to occur at Stanford University. Additional suitable habitat occurs on serpentine soils in the Program Renewal Area, such as at Anderson and Calero Reservoirs, west of Coyote Valley, in the Santa Teresa Hills, on Communications Hill, and north of Alum Rock Park. Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Loma Prieta hoita (*Hoita strobilina*)	CRPR 1B.1, VHP	Chaparral, cismontane woodland, riparian woodland, usually serpentinite/mesic mixed serpentine chaparral, serpentine seeps	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Numerous records are present in the Program Renewal Area on serpentine soils, predominantly in the Santa Cruz mountains from Saratoga to Gilroy, but also in the Diablo Range near Coyote Ridge. Suitable habitat is present in the Program Renewal Area in riparian areas, particularly in the mesic-serpentine influenced soils of the Santa Cruz mountains. Known occurrences along several creeks in the Program Renewal Area suggest the possibility that this species may occur within Program Renewal work areas. However, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Satan's goldenbush (*Isocoma menziesii* var. *diabolica*)	CRPR 4.2	Cismontane woodland/oak woodland	**Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** The species has only been documented in Santa Clara, San Benito, and Monterey Counties. It occurs in the Program Renewal Area in the foothills of the Diablo Range in eastern San Jose from Alum Rock Park north to Ed Levin County Park. Suitable habitat is present in the foothills of the Diablo Range where oak woodland habitat occurs in the Santa Teresa Hills, the Almaden Hills, near Anderson Reservoir, and along Coyote Ridge. However, Program Renewal work activities are not projected to occur into foothill areas where this species is known to occur; rather, work activities will occur downstream within urban areas. Although some potential exists for the species to occur in suitable habitat near Program Renewal work areas, it is unlikely to occur within the work areas themselves.

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Woolly-headed lessingia (*Lessingia hololeuca*)	CRPR 3	Clay and serpentinite soils in broadleaved upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland habitats at elevations of approximately 49–1,000 feet	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Three records exist in the Program Renewal Area: one in the foothills west of Los Gatos, one in Sierra Azul Open Space Preserve, one in an area north of Gilroy. Suitable habitat elsewhere in the Program Renewal Area is present on serpentine soils in the foothills of the Santa Cruz Mountains. Valley Water surveys for special-status plants conducted for prior Program Renewal activities and other purposes have not detected this species along creeks in the Program Renewal Area. In addition, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Smooth lessingia (*Lessingia micradenia* var. *glabrata*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland - on serpentinite, often roadsides/mixed serpentine chaparral and oak woodland	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** In the Program Renewal Area, numerous records are present in the foothills of the Santa Cruz Mountains and the Diablo Range in the central and southern portions of Santa Clara County. Suitable habitat is present on rocky slopes and along roadsides in serpentine-derived soils throughout these areas. The species could occur on serpentine substrates along creeks near Program Renewal work locations. However, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Arcuate bush-mallow (*Malacothamnus arcuatus*)	CRPR 1B.2	Chaparral and cismontane woodland from 50–1,165 feet in elevation	**Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** Known to occur at Rancho San Antonio Open Space Preserve and was historically present at a number of additional locations in Santa Clara County including in the Santa Cruz Mountains, along Coyote Ridge, in Palo Alto, and along Alviso Slough. The species could occur in suitable habitat along Program Renewal streams in these areas; however, due to its limited distribution, the likelihood of occurrence is extremely low.
Hall's bush-mallow (*Malacothamnus hallii*)	CRPR 1B.2, VHP*	Chaparral, coastal scrub/chaparral	**Present in the Program Renewal Area, May be Present in Program Renewal Work Areas.** Numerous records of the species exist in the Program Renewal Area in the Santa Teresa Hills, along Coyote Ridge, at Calero County Park and at Tilton Ranch in Morgan Hill. Additional suitable habitat is present in the foothills of the Santa Cruz Mountains and the Diablo Range. Some potential exists for the species to occur in or near Program Renewal work sites within suitable habitat.

Common Name (Scientific Name)	Status [1, 2, 3]	Habitat Association	Potential to Occur
Woodland woollythreads (*Monolopia gracilens*)	CRPR 1B.2, VHP*	Grasslands or open areas in chaparral, coastal scrub, cismontane woodland, and North Coast coniferous forest on serpentinite	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Occurs in the Program Renewal Area at Foothills Open Space Preserve, at Hidden Villa, at Rancho San Antonio Open Space Preserve, in the Santa Teresa Hills, along Metcalf Road, at Sierra Azul Open Space Preserve, at Almaden Quicksilver County Park, along Coyote Ridge, at Rancho San Vicente Open Space Preserve, above Anderson Lake Dam, at Coyote Valley Open Space Preserve, at Sierra Vista Open Space Preserve, and above Pacheco Reservoir. The species could occur on serpentinite substrates along creeks near Program Renewal work locations. However, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Prostrate vernal pool navarretia (*Navarretia prostrata*)	CNPS 1B.2	Vernal pools, seeps, valley and foothill grassland	**Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** Present within the Program Renewal Area at San Felipe Lake, though no Program Renewal activities are projected to occur there. Unlikely to occur within Program Renewal work areas due to the species' limited distribution and a lack of suitable habitat.
Most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland, valley and foothill grassland in serpentinite/ serpentine bunchgrass grassland, mixed serpentine chaparral	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Occurs in the Program Renewal Area at Rancho San Vicente Open Space Preserve, near Rancho Canada del Oro Open Space Preserve, along Coyote Ridge, and additional historical occurrences are present in the Santa Cruz Mountain foothills from Los Gatos to Morgan Hill. May occur in suitable habitat along Program Renewal streams in the Program Renewal Area. However, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Common Name (Scientific Name)	**Status [1, 2, 3]**	**Habitat Association**	**Potential to Occur**
Saline clover (*Trifolium hydrophilum*)	CRPR 1B.2	Mesic, alkaline, or saline sites in valley and foothill grassland habitat, in vernal pool habitat, or in marshes and swamps at elevations from 0–984 feet; occurs in	**May be Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** No known occurrences in the Program Renewal Area, but suitable habitat may be present. The nearest documented occurrences are between Millers Canal and the Pajaro River off Highway 125 near the San Benito and Santa Clara County line, where no Program Renewal activities are projected to occur. Suitable habitat in the Program Renewal Area includes mesic-alkaline soils in pools, marshes, and swamps, as well as in grasslands, such as those near Alviso and the Pajaro River. Unlikely to occur within Program Renewal work areas due to the lack of known occurrences in the Program Renewal Area.

		both coastal and inland marshes (Jepson Project 2024)	

[1] Federal and State Endangered and Threatened Status Definitions:

Federal

FE Endangered under FESA

FT Threatened under FESA

State

ST Threatened under CESA

[2] CNPS List CRPRs:

1A Plants considered extinct.

1B Plants rare, threatened, or endangered in California and elsewhere.

3 Plants about which more information is needed - review list.

4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

.1—seriously endangered in California.

.2—fairly endangered in California.

.3—not very endangered in California.

[3] VHP = Species covered under the VHP; VHP* = Species proposed for coverage under the VHP amendment

Sources: CNDDB 2024, CNPS 2024, and Calflora 2024

Special-Status Animals

For purposes of this analysis, "special-status" animals are considered animal species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- Listed under CESA as threatened, endangered, or a candidate species;
- Designated by the CDFW as a California species of special concern;
- Designated by the California Fish and Game Code as a fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515);.
- Covered under the VHP amendment in progress; and/or
- Protected by the Marine Mammal Protection Act.

The legal status and likelihood of occurrence within the Program Renewal Area of special-status animal species known to occur or potentially occurring in the surrounding region are presented in Table 3.4-4.

Several special-status animal species historically occurred in the Program Renewal Area, or have been recorded in Santa Clara County, but are not expected to be present in the Program Renewal Area currently. The special-status animal species discussed below are not included in Table 3.4-4 or discussed in this assessment further.

The western ridged mussel (*Gonidea angulata*) occurs in small populations in rivers. Recent re-surveys of historically occupied sites in central and southern California did not detect individuals, though some sites in far northern California were still occupied (Xerces Society for Invertebrate Conservation 2020). That survey concluded that the mussel is "possibly extinct" in the northwestern and western portions of Santa Clara County, while extant in the North Bay and other portions of northern California.

Although the western bumble bee (*Bombus occidentalis*) was historically found throughout much of California, it has been extirpated from much of its former range, and there are no recent records from Santa Clara County or nearby areas (CDFW 2019, Bumble Bee Watch 2024, CNDDB 2024, iNaturalist 2024). Therefore, this species is absent from the Program Renewal Area.

The CCC coho salmon (*Oncorhynchus kisutch*) was anecdotally reported in Coyote Creek, and possibly in the Guadalupe River and Los Gatos Creek (Skinner 1962 as cited in Leidy et al. 2005). However, it is unclear whether the species was ever actually present, as the life history of coho salmon is not conducive to its existence in South San Francisco Bay streams under either historical or current conditions. If it was ever present, it has been extirpated from these areas (Leidy 2005, Spence et al. 2005).

The range of the western spadefoot toad (*Spea hammondii*) is not known to include Santa Clara County, even historically, as there are no known occurrences in Santa Clara County. Nearest occurrences in San Benito County along the southern edge of Hollister are more than 8.5 miles from the Program Renewal Area, and unsuitable land uses and the Pajaro River are a biogeographic barrier to dispersal into Santa Clara County. Nearest occurrences

in eastern Alameda County are more than 11 miles from the Program Renewal Area, and no suitable habitat is present in intervening areas or nearby portions of Santa Clara County.

The silvery legless lizard (*Anniella pulchra pulchra*) was historically recorded in the northern San Jose portion of the Program Renewal Area, but no recent records exist. This species has been displaced by development or disturbed by agriculture in much of the Program Renewal Area, and a suite of other factors (e.g., off-road vehicle activity, erosion, livestock grazing, and the introduction of nonnative plant species) has altered remaining habitat to the extent that the species is no longer expected to occur in the Program Renewal Area.

The southern edge of the Alameda whipsnake's (*Masticophis lateralis euryxanthus*) range is located at the northern edge of eastern Santa Clara County within the San Francisco Public Utilities Commission-owned portion of the Alameda Creek Watershed. This subspecies may intergrade with the chaparral whipsnake (*M. l. lateralis*) at the southern edge of its range, making identification difficult. The most recent extant CNDDB occurrences (from 2014 to 2017) are located east of Calaveras Reservoir outside the Program Renewal Area (CNDDB 2024). Thus, this species is determined to be absent from the Program Renewal Area.

The willow flycatcher (*Empidonax traillii*) formerly nested commonly in riparian habitats on the Santa Clara Valley floor, but local populations were extirpated by the late 1960s. This species still occurs as an uncommon migrant in the Program Renewal Area, moving between wintering areas in Mexico and breeding areas to the north (Unitt 1987, Hunter et al. 2005). However, migrant willow flycatchers occurring in the Program Renewal Area are likely from breeding populations outside the state, and, thus, would not be individuals from the state-listed California population or the federally listed *extimus* subspecies that nests in riparian habitat in southern California (Unitt 1987).

The yellow rail (*Coturnicops noveboracensis*), a California species of special concern, is rare in California but was historically known to overwinter in coastal tidal marshes in the greater San Francisco Bay region. The species could occur in tidal marshes in the Program Renewal Area, though there are very few recent records, and it likely occurs in very low numbers and irregularly, if at all.

Several bird species that are considered California species of special concern only when nesting occurs in the Program Renewal Area as nonbreeding transients, foragers, or migrants, and have never been recorded breeding in or very close to the Program Renewal Area. These include the Barrow's goldeneye (*Bucephala islandica*), common loon (*Gavia immer*), American white pelican, black swift (*Cypseloides niger*), black tern (*Chlidonias niger*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Because they are only considered species of special concern when nesting, they are not special-status species when they occur as nonbreeding visitors to the Program Renewal Area. Thus, these species are not discussed further in this assessment, and they are not included in Table 3.4-4.

Three bird species that are state or federally listed, and consequently are considered special-status species year-round, also occasionally occur in the Program Renewal Area as nonbreeding migrants, transients, or foragers, but they are not known or expected to breed, to occur regularly, or to occur in large numbers in the Program Renewal Area. These are the state and federally endangered California condor and California least tern, and the state threatened bank swallow. Although they occur in the Program Renewal Area only infrequently and/or in small numbers, they are discussed in further detail in Table 3.4-4 below because they are considered special-status species year-round. The willow flycatcher

(discussed above) would be treated similarly to these species if the individuals that occur as migrants in the Program Renewal Area were from the state-listed California breeding populations; however, the probability that any California-breeding willow flycatchers migrate through the Program Renewal Area is extremely low given the scarcity of the species as a breeder in California (as opposed to areas farther north) north of the Program Renewal Area.

Additional special-status animal species are addressed in greater detail in Table 3.4-4 below because they (1) are known to breed or could breed in the Program Renewal Area, (2) occur fairly commonly as nonbreeders in the Program Renewal Area (and thus could be substantially affected by activities that occur under the Program Renewal), (3) are described in the VHP as potentially occurring in the Program Renewal Area, and/or (4) are of particular concern to regulatory agencies. These are the Bay checkerspot butterfly, large marble butterfly, monarch butterfly, Crotch's bumble bee, CCC and SCCC steelhead, Central Valley fall-run Chinook salmon, Pacific lamprey, Sacramento hitch, southern coastal roach, Monterey hitch, riffle sculpin, southern green sturgeon, white sturgeon, San Francisco Bay-Delta longfin smelt, Santa Cruz black salamander (*Aneides niger*), California giant salamander, California tiger salamander, California red-legged frog, foothill yellow-legged frog, San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), northwestern pond turtle, coast horned lizard (*Phrynosoma blainvillii*), redhead (*Aythya americana*), least bittern (*Botaurus exilis*), Vaux's swift (*Chaetura vauxi*), western snowy plover, California Ridgway's rail, California black rail, black skimmer (*Rynchops niger*), northern harrier, Swainson's hawk, white-tailed kite, golden eagle, bald eagle, long-eared owl (*Asio otus*), short-eared owl (*Asio flammeus*), burrowing owl, olive-sided flycatcher (*Contopus cooperi*), loggerhead shrike, purple martin (*Progne subis*), least Bell's vireo, yellow-breasted chat (*Icteria virens*), Alameda song sparrow, grasshopper sparrow, Bryant's savannah sparrow, tricolored blackbird, yellow warbler, San Francisco common yellowthroat, salt marsh harvest mouse, salt marsh wandering shrew, San Francisco dusky-footed woodrat, pallid bat, Townsend's big-eared bat (*Corynorhinus townsendii*), western red bat (*Lasiurus blossevillii*), American badger, ringtail, Central Coast Evolutionarily Significant Unit of the mountain lion, San Joaquin kit fox, and Pacific harbor seal.

Table 3.4-4. Special-Status Wildlife Species with Potential to Occur in the Program Renewal Area and in Program Renewal Work Areas

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Federal or State Endangered, Threatened, or Candidate Species			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT, VHP	Native grasslands on serpentine soils. Larval host plants are *Plantago erecta* and/or *Castilleja* sp.	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** Occurs within the Program Renewal Area in serpentine bunchgrass grasslands and serpentine rock outcrop/barrens on the east side of the Santa Clara Valley from Coyote Ridge south to Harvey Bear Ranch, and on the west side of the Santa Clara Valley from the Santa Teresa Hills south to San Martin (Figure 3.4-2). However, Program Renewal activities will avoid serpentine habitat areas. Therefore, this species is absent from Program Renewal work areas.
Large marble butterfly (*Euchloe ausonides ausonides*)	FPE, VHP*	A variety of habitats including grasslands, open meadows, and streams. Larval host plants are in the mustard family (Brassicaceae).	**Present in the Program Renewal Area and Program Renewal Work Areas.** May occur widely, though possibly only scarcely in many areas, as a resident in the Program Renewal Area. Mustards are widespread along streams and in grasslands in the Program Renewal Area and provide suitable larval host plants. This species likely occurs in grasslands and along streams throughout much of the Program Renewal Area in low numbers. Occurrence along urban streams is expected to be much less frequent compared to streams located in more natural areas. This species also occurs in upland areas adjacent to tidal marshes and waters, where mustards are present.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Monarch butterfly (*Danaus plexippus*)	FC, VHP*	Larval host plants are typically milkweeds (*Asclepias* spp.); nectars on a variety of flowering plants	**Present in Program Renewal Area and Program Renewal Work Areas.** Occurs widely as an uncommon migrant, nectaring on flowering plants. Narrow-leaf milkweed (*Asclepias fascicularis*) is present in scattered patches throughout the Program Renewal Area, with more substantial patches present along West Little Llagas Creek in Morgan Hill (west of Hale Avenue) and along Llagas Creek in Gilroy (from approximately State Route 152 north to Buena Vista Avenue). However, close examination of approximately 480 clusters of milkweed plants along Coyote Creek between Anderson Dam and the Coyote Creek Golf Course area (including the Ogier Ponds) during three days in May and June 2022 detected only two monarch butterfly larvae; inspection of 100 plants along the rim of Anderson Reservoir on July 30, 2022, detected no monarch eggs, larvae, or pupae (S. Rottenborn, personal observation). Thus, although monarch butterflies breed in the Program Renewal Area, they do so in low numbers, breeding much less commonly (at least along streams) than is indicated by the abundance of their host plants. Breeding occurs both in natural areas (on narrow-leaf milkweed) and in suburban areas (where monarchs have been documented breeding on milkweed, particularly nonnative tropical milkweed [*Asclepias curassavica*], in landscaped areas). Some monarchs have recently overwintered in the Palo Alto/Mountain View area, even breeding through the winter, though not in large roosting aggregations. No large wintering aggregations occur in Santa Clara County.
Crotch's bumble bee (*Bombus crotchii*)	SC, VHP*	Open grassland and scrub habitats	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Concern over possible population declines and range contractions led CDFW (2019) to designate this species as a candidate for listing under CESA. However, since 2019, there have been documented occurrences of approximately 100 individuals from nearly 20 locations in Santa Clara County (Bumble Bee Watch 2024, iNaturalist 2024, S. Lockwood and S. Rottenborn, pers. obs.), indicating that the species is still extant, and fairly widespread (albeit in low numbers in most locations) in the county. This species likely occurs in grassland and scrub habitat throughout much of the Program Renewal Area in low numbers, and it may occur along streams located within or near extensive grasslands or scrub. Occurrence along urban streams is expected to be much less frequent.
Southern distinct population segment (DPS) of North American green sturgeon	FT	Spawns in large river systems such as the Sacramento River; forages in nearshore	**May be Present in Program Renewal Area as Nonbreeder, Likely Absent from Program Renewal Work Areas.** Known to occur in the San Francisco Bay, but apparently occurs in the South Bay very rarely as a non-spawing visitor and does not spawn in the South Bay. May occur in the tidal reaches of lower San Francisquito Creek, lower Permanente Creek/Mountain View Slough, lower Stevens

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
(*Acipenser medirostris*)		oceanic waters, bays, and estuaries.	Creek/Williamson Slough, Alviso Slough, Guadalupe Slough, Moffett Channel, Lower Calabazas Creek, lower San Tomas Aquino Creek, and/or Coyote Slough within the Program Renewal Area, albeit infrequently and in low numbers, if at all. Likely occurs only irregularly and in low numbers in the Program Renewal Area because of the very limited abundance of the species in the vicinity and limited extent of Program Renewal activities proposed in tidal habitats.
White sturgeon (*Acipenser transmontanus*)	SC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	**Present in Program Renewal Area and Program Renewal Work Areas**. White sturgeon occur in lower San Francisquito Creek, lower Stevens Creek/Williamson Slough, Guadalupe Slough, the Moffett Channel, lower Calabazas Creek, lower San Tomas Aquino Creek, Alviso Slough, and the tidally influenced portion of Coyote Creek in the Program Renewal Area (Otolith Geochemistry & Fish Ecology Laboratory 2021).
San Francisco Bay-Delta longfin smelt (*Spirinchus thaleichthys*)	FE, ST	Spawns and forages in low-salinity habitats in the intertidal portions of Coyote and Alviso Sloughs within the South Bay.	**Present in Program Renewal Area and Program Renewal Work Areas.** Occurs in the South Bay year-round (Wernette 2000) and has been collected in Coyote and Alviso Sloughs from October through May (Hobbs et al. 2012, Otolith Geochemistry & Fish Ecology Laboratory 2021, 2022, 2023) as well as in the Island Ponds between Coyote Slough and Mud Slough (Hobbs 2011). Adult longfin smelt have been observed spawning or preparing to spawn in restored salt ponds and tidal sloughs within the Program Renewal Area (Lewis et al. 2020, Barros et al. 2021, Otolith Geochemistry & Fish Ecology Laboratory 2021, 2022, 2023). To date, longfin smelt have only been documented in tidal areas and have not been documented in nontidal areas upstream. May be present in the tidal reaches of any sloughs in the South Bay.
Central California Coast DPS steelhead (*Oncorhynchus mykiss*)	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Present in Program Renewal Area and Program Renewal Work Areas.** Known to occur in the Program Renewal Area in a number of streams flowing into San Francisco Bay, including the Guadalupe River, Guadalupe Creek, Alamitos Creek, Los Gatos Creek, Calero Creek, Coyote Creek, Upper Penitencia Creek, Arroyo Aguague, Los Trancos Creek, Stevens Creek, and San Francisquito Creek. Juveniles present year-round in upper reaches of streams. Likely present in all accessible reaches of these streams in the Program Renewal Area during migration. Also present in the lower, tidal reaches of Alviso Slough, Coyote Slough, Stevens Creek, and San Francisquito Creek, as well as in estuarine habitats of the South Bay, during migration.
South-Central California Coast DPS steelhead	FT	Cool streams with suitable spawning habitat and conditions allowing migration	**Present.** Known to occur in the Program Renewal Area in the Pajaro River and its tributaries, including Pescadero Creek, Llagas Creek, Uvas/Carnadero Creek, Little Arthur Creek, Bodfish Creek, Tar Creek, Pacheco Creek, Cedar Creek, and South Fork

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
(Oncorhynchus mykiss)		between spawning and marine habitats.	Pacheco Creek (Leidy 2007, Casagrande 2010). Likely present in all accessible reaches of these streams in the Program Renewal Area during migration.
California tiger salamander (*Ambystoma californiense*)	FT, ST, VHP	Breeds in seasonal and perennial pools/ponds in grasslands or open woodlands; spends most time in subterranean refugia such as small mammal burrows or deep rock crevices	**Present in Program Renewal Area and Program Renewal Work Areas.** Historically may have occurred throughout the Program Renewal Area; however, populations located along the Valley floor have been extirpated because of habitat alteration, and the species is absent from most of the Valley floor. Recent occurrences are scattered on the periphery of the Program Renewal Area in the foothills of the Santa Cruz Mountains from Santa Teresa County Park to Gilroy, and in the foothills of the Diablo Range from Coyote Ridge to Gilroy (Figure 3.4-3).
California red-legged frog (*Rana draytonii*)	FT, CSSC, VHP	Streams, freshwater pools, and ponds with emergent or overhanging vegetation	**Present in Program Renewal Area and Program Renewal Work Areas.** This species has been extirpated from much of the Valley floor, and red-legged frogs are not expected to occur throughout most of the developed portions of the Program Renewal Area, even in streams and ponds. However, red-legged frogs are known or expected to occur in a number of locations on the periphery of the Program Renewal Area (i.e., in or near the upper, less developed reaches of streams in the Program Renewal Area) in the foothills of the Santa Cruz Mountains from Sierra Azul Open Space Preserve south to Gilroy, and in the foothills of the Diablo Range from Alum Rock Park to Gilroy (Figure 3.4-4).
Foothill yellow-legged frog (*Rana boylii*)	SE, FT, VHP	Partially shaded, shallow, perennial streams and riffles with a rocky substrate. Also, occasionally occurs in intermittent streams and small in-stream impoundments. Occurs in a variety of habitats in coast ranges	**Present in Program Renewal Area, Absent from Program Renewal Work Areas.** In the Program Renewal Area, this species has disappeared from streams below major reservoirs. Populations of foothill yellow-legged frogs are still present on the margins of the Program Renewal Area along the upper reaches of some streams above major reservoirs, including perennial and intermittent streams (H. T. Harvey & Associates 1999c). However, this species is absent from areas where Program Renewal work will occur (Figure 3.4-5).

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Northwestern pond turtle (*Actinemys marmorata*)	FPT, CSSC, VHP	Permanent or intermittent/seasonal water in a variety of habitats	**Present in Program Renewal Area and Program Renewal Work Areas.** Occurs in a number of aquatic habitats in the Program Renewal Area, including a number of perennial and intermittent creeks, rivers, lakes, and ponds (CNDDB 2024, H. T. Harvey & Associates 2012a) (Figure 3.4-6). Breeding populations of northwestern pond turtles have been extirpated from many urbanized areas in the region. However, individuals of this long-lived species still occur in perennial urban streams and ponds in the Program Renewal Area. Occurrence is more limited in intermittent creek systems. Potentially suitable nesting habitat for northwestern pond turtles is present in grassland areas adjacent to suitable streams and ponds in the Program Renewal Area.
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE, SE, SP	Freshwater marshes, ponds, and slow-moving streams along the coast	**Absent from Program Renewal Area and Program Renewal Work Areas.** Garter snakes in the northwestern part of the Program Renewal Area (i.e., in the Palo Alto/Stanford area) fall within the intergrade zone between the San Francisco garter snake and the red-sided garter snake (*Thamnophis sirtalis infernalis*) (Barry 1994). The intergrade populations do not belong exclusively to either subspecies; thus, true San Francisco garter snakes do not occur in the Program Renewal Area.
Bank swallow (*Riparia riparia*)	ST	Colonial nester on vertical banks or cliffs with fine-textured soils near water	**Present as Nonbreeder in Program Renewal Area and Program Renewal Work Areas.** No recent breeding records from Santa Clara County. Occurs in the Program Renewal Area only as a scarce migrant.
California condor (*Gymnogyps californianus*)	FE, SE, SP	Nests in caves in steep, isolated cliffs or cavities in mature redwood trees. Forages over grasslands, open woodlands, and along coastal beaches	**Present as Nonbreeder in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** Historically present in the Program Renewal Area as a nonbreeder, but currently known to occur in the Program Renewal Area only as an infrequent dispersant (usually flying very high over the area). There have been several observations of birds flying high over the Diablo Range foothills, the Pacheco Creek area, and the Saratoga/Los Gatos area (Cornell Lab of Ornithology 2024), demonstrating that reintroduced individuals from Pinnacles National Monument in San Benito County occasionally range as far north as the Program Renewal Area (and may do so increasingly in the future if the reintroduced population expands). However, such individuals are unlikely to occur in the low-elevation areas where Program Renewal activities will occur.
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs,	**Present in Program Renewal Area and Program Renewal Work Areas.** Numbers of bald eagles have been increasing in the Program Renewal Area in recent years, and at least 10 pairs currently nest here. This species has recently nested in the Program Renewal Area (i.e., below 1,000 feet in elevation) at Coyote Reservoir, Anderson

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
		occasionally on electrical towers; feeds mostly on fish and waterfowl	Reservoir, Lexington Reservoir, Calero Reservoir, San Felipe Lake, the Ogier Ponds, Pacheco Creek, Curtner Elementary School in Milpitas, Felt Lake, and other locations. Small numbers of nonbreeding bald eagles also forage throughout the Program Renewal Area, primarily at large reservoirs, during winter and migration.
Swainson's hawk (*Buteo swainsoni*)	ST, VHP*	Nests in trees surrounded by extensive marshland or agricultural foraging habitat	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Two pairs of Swainson's hawks have been confirmed nesting in Santa Clara County in recent years. Each year from 2013 to 2020, a pair of Swainson's hawks nested near Coyote Creek in northern Coyote Valley, providing the first County nesting record since the 1890s (Phillips et al. 2014). The only other modern record of nesting Swainson's hawk in Santa Clara County has been along State Route 152 southeast of Gilroy, from 2018 through 2023 (Klein et al. 2022). This species' population/range expansion has been more pronounced in San Benito County to the south in comparison to Santa Clara County. Additional nesting pairs are expected to occur in the Program Renewal Area in future years as the species' population continues to increase. This species could therefore also nest in the Program Renewal Area in the future, and it could forage along Program Renewal streams. Small numbers of nonbreeding individuals forage in open habitats elsewhere in the Program Renewal Area during migration.
California Ridgway's rail (*Rallus obsoletus obsoletus*)	FE, SE, SP	Tidal salt marsh dominated by cordgrass and pickleweed; occasionally occurs in brackish marshes as well	**Present in Program Renewal Area and Program Renewal Work Areas.** Suitable nesting habitat is present in the Program Renewal Area in salt marsh habitat along the lowermost tidal reaches of creeks that flow into the San Francisco Bay (Liu et al. 2012) (Figure 3.4-7). On very rare occasions, nonbreeding individuals wander up tidal sloughs (e.g., in tidal brackish/freshwater marsh habitats along Alviso Slough); however, all suitable breeding habitat for Ridgway's rails occurs in saline and brackish tidal marshes.
California black rail (*Laterallus jamaicensis coturniculus*)	ST, SP	Breeds in fresh, brackish, and tidal salt marsh near the edge of San Francisco Bay	**Present in Program Renewal Area and Program Renewal Work Areas.** Until recently, black rails were known to occur in the South Bay primarily as scarce winter visitors. However, since 2012, this species has been recorded during the breeding season in Santa Clara County tidal marshes, and nesting has been documented at Alviso Marina County Park. Broader tidal marshes along streams in the Program Renewal Area may support nesting black rails (Figure 3.4-7). Foraging habitat for this species is also present in tidal portions of streams in the Program Renewal Area, and individuals may occasionally forage in tidal habitats in the Program Renewal Area year-round. An individual was also detected in freshwater marsh habitat at Rancho

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
			San Antonio in June 2023 and March 2024, but nesting has not been documented at this location.
Western snowy plover (*Charadrius nivosus nivosus*)	FT, CSSC	Sandy beaches on marine and estuarine shores and salt pannes in the San Francisco Bay saline managed ponds	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Nests on levees, islands, and salt flats in some of the South Bay saline-managed ponds in the Program Renewal Area. Documented nesting in Crittenden Marsh in Mountain View; in Alviso complex Ponds A3N, A6, A8S, A9, A12, A13, A15, A6, and A17; and in New Chicago Marsh and the adjacent impoundment in Alviso from 2009–2021 (San Francisco Bay Bird Observatory 2024) (Figure 3.4-8). Forages in these same areas and on levees and managed pond bottoms in other ponds along the Bay edge. Suitable foraging habitat is present along Program Renewal streams within the Program Renewal Area, and snowy plovers may forage along these streams year-round. Individuals are not expected to nest within Program Renewal work areas; however, nesting pairs may be present in immediately adjacent ponds.
California least tern (*Sternula antillarum browni*)	FE, SE, SP	Nests along the coast on bare or sparsely vegetated, flat substrates; in the South Bay, nests in salt pannes and on an old airport runway; forages for fish in open waters	**Present as Nonbreeder in Program Renewal Area, May be Present in Program Renewal Work Areas.** Does not nest in the Program Renewal Area; however, the South Bay is an important post-breeding staging area for least terns. Most such staging has occurred outside of (but close to) the Program Renewal Area in managed ponds along the Bay in the Mountain View/Sunnyvale area (occasionally in the Alviso area). When this species is observed in the Program Renewal Area vicinity, it is seen foraging in managed ponds and over the more extensive open bay. Although least terns could forage on occasion along tidal portions of Program Renewal Area streams, they likely do so infrequently and in low numbers.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, SE, VHP	Nests in heterogeneous riparian habitat, often dominated by cottonwoods and willows	**Unlikely to Occur in Program Renewal Area and Program Renewal Work Areas.** The only breeding records in Santa Clara County are from Llagas Creek southeast of Gilroy in 1997 and the Pajaro River south of Gilroy in 1932 (Figure 3.4-9). The only other confirmed records are of one or two singing males along lower Llagas Creek in May 2001 and a spring migrant in Alviso in May 2016. A singing male Bell's vireo in June 2006 along Coyote Creek near the Coyote Creek Golf Club was heard only, and hence may have been either a least Bell's vireo or a vagrant eastern Bell's vireo (*V. b. bellii*), a subspecies that has also occurred in the Program Renewal Area. Although least Bell's vireos may increase in number and distribution in Santa Clara County as core populations increase, it is unlikely to be more than a rare and very locally occurring breeder along South County streams.
Tricolored blackbird (*Agelaius tricolor*)	ST, VHP	Highly colonial nester that establishes dense breeding colonies in	**Present in Program Renewal Area and Program Renewal Work Areas.** Typically nests in extensive stands of tall emergent herbaceous vegetation in freshwater marshes, ponds, and reservoirs. In the Program Renewal Area, nesting colonies of this

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
		emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, ruderal vegetation such as mustard or thistle, and occasionally in early-successional riparian habitat. Nesting colonies usually are located near fresh water. Tricolored blackbirds are itinerant nesters, and because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available.	species are itinerant and patchily distributed, their distribution reflecting the patchy nature of the species' breeding habitat (Rottenborn 2007a). Tricolored blackbirds occur as uncommon nonbreeding foragers throughout most of the Program Renewal Area.
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, SP	Salt marsh habitat dominated by common pickleweed or alkali bulrush; recent studies have indicated that the species also utilizes brackish marshes, non-tidal managed wetlands, and some adjacent upland habitats (Smith 2019)	**Present in Program Renewal Area and Program Renewal Work Areas.** Known to occur in the Program Renewal Area in saline and brackish marshes, particularly those dominated by pickleweed or dense mature tri-corner bulrush around the Bay edge, including both fully tidal and diked/muted tidal marshes (H. T. Harvey & Associates 2016) (Figure 3.4-10). Individuals may occur in Program Renewal work areas where suitable habitat is present, especially where this habitat is connected to extensive tidal marshes.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Mountain lion, Central Coast ESU (*Puma concolor*)	SC, VHP*	Has a large home range size and occurs in a variety of habitats. Natal dens are typically located in remote, rugged terrain far from human activity. May occasionally occur in areas near human development, especially during dispersal.	**Present in Program Renewal Area and Program Renewal Work Areas.** Within the Program Renewal Area, there are verified sightings reported on the Bay Area Puma Project (2024) and numerous unpublished reports. Occurs widely, though at low densities, throughout the Santa Cruz Mountains and Diablo Range, and may disperse into lowland/Valley floor areas. Mountain lions are not expected to occur within urbanized portions of the Program Renewal Area due to high levels of human activity, except as rare dispersants along the peripheries of developed areas. Open lands on the periphery of the Program Renewal Area provide suitable foraging and dispersal habitat for this species, and individuals likely occur in these areas periodically and in low numbers. However, mountain lions are not expected to den or breed along or near Program Renewal Area channels due to human disturbance.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, ST, VHP	Flat or gently sloping grasslands, mostly on the margins of the San Joaquin Valley and adjacent valleys	**May be Present in Program Renewal Area and Program Renewal Work Areas.** May occur only in the southeastern portion of the Program Renewal Area, in the vicinity of Pacheco Creek and the uppermost reaches of the Pajaro River. If it occurs here at all, it is likely to occur in low numbers, and infrequently, during dispersal between areas of known breeding activity outside the Program Renewal Area.

Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
California Species of Special Concern			
Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*)	CSSC	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	**Present in Program Renewal Area and Program Renewal Work Areas.** Has been observed in Program Renewal Area streams since the mid-1980s (Leidy et al. 2003) and is known to occur in the Program Renewal Area in the Guadalupe River, Guadalupe Creek, Alamitos Creek, Calero Creek, Los Gatos Creek, and Coyote Creek, in very small numbers (Leidy et al. 2003, Valley Water unpublished data, Valley Water and Stillwater Sciences 2017). Uses the lower reaches of Coyote Creek and Alviso Slough as migration corridors between estuarine habitats and upstream spawning and rearing habitats. However, genetic analysis suggests that Chinook currently occurring in South Bay streams are all derived from hatchery stock (Garcia-Rossi and Hedgecock 2002, Valley Water 2018). Because the hatchery fish are released into San Francisco Bay and the Pacific Ocean as juveniles, they lack a strong homing instinct, which leads them to be more likely to stray to various river systems in the San Francisco Bay such as Coyote Creek and the Guadalupe River watersheds. Conditions for successful spawning in the Program Renewal Area are marginal because these fish spawn during fall when streamflow is at its lowest; however, successful spawning has been observed in Coyote Creek and the Guadalupe River (Valley Water 2018). Despite occasional occurrences and successful spawning, there is no evidence that Chinook salmon have become naturalized in the Program Renewal Area.
Pacific lamprey (*Entosphenus tridentata*)	CSSC	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats. Spawns in gravel-bottomed streams or rivers upstream of riffle habitat. Adults forage in marine areas.	**Present in Program Renewal Area and Program Renewal Work Areas.** Historically, this species may have been present in streams throughout the Program Renewal Area. It is currently known to occur in the Guadalupe River, San Francisquito Creek, Lower Silver Creek, Guadalupe Creek, Alamitos Creek, Los Gatos Creek, Uvas Creeks, Coyote Creek, Upper Penitencia Creek, and Stevens Creek, and may be locally common in these areas (Leidy 2007, Valley Water fish sampling and relocation data 2002–2009, USFWS et al. 2012, Valley Water 2020a, 2021a). The species' status is poorly documented, and abundance in other streams throughout the Program Renewal Area is poorly understood. Populations may be present in all accessible portions of streams in the Program Renewal Area during migration between spawning areas and marine foraging habitat.

Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Riffle sculpin (*Cottus gulosus*)	CSSC	Permanent headwater streams with rocky or gravel substrates and adequate cover.	**Present in Program Renewal Area and Program Renewal Work Areas.** Within the Program Renewal Area, riffle sculpin occur in the Guadalupe River, Guadalupe Creek, and Los Gatos Creek (Valley Water unpublished data 2004–2017; Valley Water 2019c, 2020b, and 2021b); Upper Penitencia Creek (Valley Water 2021a); San Francisquito Creek (Leidy 2007); the Pajaro River (Moyle et al. 2015); and Uvas Creek (Casagrande 2010).
Sacramento hitch (*Lavinia exilicauda exilicauda*)	CSSC	Prefer warm, lowland waters, but are also known to be abundant in cool, clear streams. Spawning can occur in riffles, ponds, and reservoirs.	**Present in Program Renewal Area and Program Renewal Work Areas**. Within the Program Renewal Area, Sacramento hitch occur in Coyote Creek and Coyote Reservoir (Leidy 2007, Valley Water 2020a, Valley Water 2020c); the Guadalupe River, Los Gatos Creek, and Saratoga Creek (Leidy 2007); Anderson Reservoir (Smith 2013, Leidy 2007, Stillwater Sciences 2018); and San Francisquito Creek (Leidy 2007).
Southern coastal roach (*Hesperoleucus venustus subditus*)	CSSC	Occur in a wide array of habitats and are tolerant of intermittent surface water, a range of temperatures, and low dissolved oxygen. Spawn in shallow habitats with flow and coarse substrates.	**Present in Program Renewal Area and Program Renewal Work Areas.** Within the Program Renewal Area, southern coastal roach occur in Coyote Creek and Upper Penitencia Creek (Valley Water 2008, Smith 2020, Valley Water 2021a, 2022), as well as Uvas Creek, Llagas Creek, North Fork Pacheco Creek, and Arroyo Dos Picachos (Moyle et al. 2015).
Monterey hitch (*Lavinia exilicauda harengus*)	CSSC	Abundant in lowland areas with large pools or in small reservoirs.	**Present in Program Renewal Area and Program Renewal Work Areas.** Monterey hitch occur in the Pajaro River, Uvas Creek, Llagas Creek, and Pacheco Creek in the Program Renewal Area (Casagrande 2010, Moyle et al. 2015).
Santa Cruz black salamander (*Aneides niger*)	CSSC	Mixed deciduous and coniferous woodlands and coastal grasslands. Adults found under rocks, talus, and moist woody debris.	**May be Present in Program Renewal Area and Program Renewal Work Areas.** Known to occur in the Program Renewal Area vicinity in Santa Cruz mountains and foothills from northern Santa Clara County south to the Santa Teresa Hills (CNDDB 2024) (Figure 3.4-11). Suitable refugia for Santa Cruz black salamanders are present under rocks and moist woody debris within the Program Renewal Area. Small numbers of individuals may also traverse work areas when moving between upland habitats in the vicinity, especially during rain events.

Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
California giant salamander (*Dicamptodon ensatus*)	CSSC	Adults found in wet forests under rocks and logs near streams. Uses cold, clear streams for breeding.	**May be Present in Program Renewal Area and Program Renewal Work Areas.** Known to occur in the Program Renewal Area vicinity in Santa Cruz mountains and foothills from northern Santa Clara County south to the Santa Teresa Hills (CNDDB 2024) (Figure 3.4-11). Suitable stream breeding habitat for this species is present in the Program Renewal Area in the foothills of the Santa Cruz Mountains, and suitable refugia are present under rocks and woody debris near wetlands. Small numbers of individuals may also traverse work areas when moving between habitats in the vicinity, especially during rain events.
Red-bellied newt (*Taricha rivularis*)	CSSC	Riparian, broadleaf, or coniferous forest in the Coast Range. Breeds in streams with moderate to fast flows.	**Absent from Program Renewal Area and Program Renewal Work Areas.** A small population is known to occur in upper Stevens Creek County Park in Santa Clara County (CNDDB 2024). However, this population is located outside the Program Renewal Area, and individuals from this population are not expected to travel to the Program Renewal Area where they could be affected by maintenance activities. In addition, this population is highly disjunct from the species' primary range located north of the San Francisco Bay (Reilly et al. 2014, Thomson et al. 2016), and appears to be limited to a very small area in the upper Stevens Creek watershed (de Leon 2021). Research has been unable to determine whether this population is likely a natural remnant population or the result of a past introduction (Reilly et al. 2014).
Coast horned lizard (*Phrynosoma blainvillii*)	CSSC	Open habitats with sandy, loosely textured soils, such as chaparral, coastal scrub, annual grassland, and clearings in riparian woodlands with the presence of native harvester ants (*Pogonomyrmex barbatus*)	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** In Santa Clara County, this species occurs primarily in arid areas in the interior of the Diablo Range, with much more limited occurrence in the Santa Cruz Mountains. Recorded in the Program Renewal Area only near Calero Reservoir (CNDDB 2024) (Figure 3.4-11). Likely restricted to a few locations on the margins of the Program Renewal Area.

Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Redhead (*Aythya americana*)	CSSC (nesting)	Nests in marshes and at bayside pond margins	**May be Present in Program Renewal Area and Program Renewal Work Areas.** Documented nesting in the Program Renewal Area only on a few occasions, including in the 1970s and 1980s at the Palo Alto Flood Control Basin and in 2018 in Pond A16 at the Don Edwards National Wildlife Refuge (South Bay Birds List-Serve 2024). Oversummering individuals are observed in baylands areas of Santa Clara County in small numbers each year (CNDDB 2024, South Bay Birds List-Serve 2024). There is a low probability of nesting in baylands habitats within the Program Renewal Area.
Least bittern (*Botaurus exilis*)	CSSC (nesting)	Nests and forages in freshwater marshes	**Present in Program Renewal Area, May be Present as Nonbreeder in Program Renewal Work Areas.** Historically a very rare nonbreeding visitor to the Program Renewal Area, but a pair of least bitterns was documented nesting at Calero Reservoir in 2022. Small numbers of individuals may continue to nest at Calero Reservoir or elsewhere in the Program Renewal Area where suitable habitat is present (e.g., the Ogier Ponds). However, the species is unlikely to nest in areas where Program Renewal activities are projected.
Black skimmer (*Rynchops niger*)	CSSC (nesting)	Nests on abandoned levees and islands in saline managed ponds and marshes	**Present in Program Renewal Area, May be Present as Nonbreeder in Program Renewal Work Areas.** Black skimmers are an uncommon resident that have nested in the South Bay since 1994. Within the Program Renewal Area, the species has nested on islands in saline managed ponds in the Alviso area (e.g., on ponds AB1, AB2, A1, A2W, A7, A8 and A16, and Pond A12 (Bousman 2007a), as well as at Shoreline Lake. No suitable nesting habitat for black skimmers is present within Program Renewal work areas. Individuals forage along tidal sloughs within Program Renewal work areas, but they are not expected to occur away from tidal/bayland areas (e.g., along streams or at inland lakes and reservoirs).
Northern harrier (*Circus cyaneus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas	**Present in Program Renewal Area and Program Renewal Work Areas.** Within the Program Renewal Area, potential nesting habitat is present primarily in tidal marshes along sloughs, in diked/muted tidal salt marshes near the Bay, in fallow fields and pastures in Coyote Valley, and in fallow fields and wetlands along lower Llagas Creek, Carnadero Creek, Pacheco Creek, and the Pajaro River. The species is known to nest near Program Renewal work areas where suitable habitat is present. Nonbreeding individuals forage regularly in grassland, agricultural, and wetland habitats throughout the Program Renewal Area, and can occur in high densities in some years (e.g., during vole outbreaks).

Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Long-eared owl (*Asio otus*)	CSSC (nesting)	Riparian bottomlands with tall, dense willows and cottonwood stands (also dense live oak and the California Bay along upland streams); forages primarily in adjacent open areas	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Rare resident and occasional winter visitor in Santa Clara County. Historical breeding records exist for the Santa Clara Valley floor, and one recent nest was recorded at Ed Levin County Park west of Calaveras Reservoir (Noble 2007). Additional individuals have been detected in Santa Clara County during the breeding season in Foothills Park and Monte Bello Open Space Preserve (Cornell Lab of Ornithology 2024). Long-eared owls could breed in oak woodlands, riparian habitats, and other wooded habitats in the foothills of the Santa Cruz Mountains and the Diablo Range, though likely only in very low numbers.
Short-eared owl (*Asio flammeus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas	**May be Present in Program Renewal Area, Unlikely to Occur in Program Renewal Work Areas.** Has been recorded nesting in the Program Renewal Area only in the Palo Alto Flood Control Basin, although it has not been confirmed nesting there since the 1970s. Low probability of nesting elsewhere.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Burrowing owl (*Athene cunicularia*)	CSSC, VHP	Prefers grasslands and ruderal habitats, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting. The nesting season as recognized by the CDFW extends from February 1 through August 31. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate; young birds disperse across the landscape from 0.1 to 35 miles from their natal burrows.	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Present year-round in the Program Renewal Area in open, agricultural, and grassland areas where active ground squirrel burrows are present. However, this species has undergone a substantial decline in Santa Clara County. Small populations of breeding and overwintering burrowing owls continue to be present at the San Jose International Airport, in the North San Jose/Alviso area, at Moffett Federal Airfield, and at Shoreline Park in Mountain View (Figure 3.4-12). Individuals occur more widely in grassland and agricultural areas throughout Santa Clara County, particularly in foothills on either side of the Santa Clara Valley, during migration and winter.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Vaux's swift (*Chaetura vauxi*)	CSSC (nesting)	Nests in snags in coastal coniferous forests or, occasionally, in chimneys; forages aerially	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** In the South Bay, nests primarily in snags in forests of the Santa Cruz Mountains but will also nest in residential chimneys in the Santa Cruz Mountain foothills from northern Santa Clara County south to Calero County Park (Rottenborn 2007b). Swifts have been observed foraging widely over various habitats, but most commonly in suburban areas having chimneys suitable for nesting, such as Los Gatos, Los Altos, Los Altos Hills, Cupertino, and Campbell. Thus, this species likely breeds more commonly than currently recorded (though still in small numbers) in residential areas in the northwestern part of the Program Renewal Area. Forages aerially over these areas during the breeding season, and anywhere over the larger Program Renewal Area during migration.
Purple martin (*Progne subis*)	CSSC (nesting)	Nest in abandoned woodpecker holes. Forages aerially for insects.	**Present as Nonbreeder in Program Renewal Area, and Program Renewal Work Areas.** Purple martins occur as scarce migrants throughout the Program Renewal Area and as rare and local breeders along the ridgeline of the Santa Cruz Mountains (Sequoia Audubon Society 2001, Rana Creek Habitat Restoration 2002, Cornell Lab of Ornithology 2024). Known summering and nesting locations include the southern edge of Sierra Azul Open Space Preserve along Loma Prieta Road (Cornell Lab of Ornithology 2024). Nesting individuals from the Santa Cruz Mountains are known to forage at lower elevations, such as at Calero Reservoir (Cornell Lab of Ornithology 2024). The species is not known to nest in the Program Renewal Area, but nesting could possibly occur in forested areas below 1,000 feet elevation.
Olive-sided flycatcher (*Contopus cooperi*)	CSSC (nesting)	Breeds in mature forests with open canopies, along forest edges in more densely vegetated areas, in recently burned forest habitats, and in selectively harvested landscapes	**May be Present in Program Renewal Area and Program Renewal Work Areas.** Common summer resident in western Santa Clara County (Bousman 2007b). This species breeds widely in the Santa Cruz Mountains, and more sparingly in the Diablo Range, but does not breed on the Santa Clara Valley floor. Few pairs nest at sites below 1,000 feet elevation but confirmed breeding has occurred at elevations as low as 400 feet (Bousman 2007b).

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting), VHP*	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** This species' population in Santa Clara County has declined in recent years. Loggerhead shrikes are currently known to nest regularly only in small numbers in the southern part of the Program Renewal Area (Cornell Lab of Ornithology 2024). Occasional individuals are also periodically observed during the nesting season in open habitats of northern Santa Clara County along San Francisco Bay, and in the Coyote Valley and Morgan Hill areas, and small numbers may still breed in those areas. Occurs slightly more widely (i.e., in smaller patches of open areas providing foraging habitat) during the nonbreeding season.
Yellow warbler (*Setophaga petechia*)	CSSC (nesting)	Nests in riparian woodlands	**Present in Program Renewal Area and Program Renewal Work Areas.** Uncommon breeder in wooded riparian habitats in the Program Renewal Area. Prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007c), particularly in areas with more open space adjacent to the riparian habitat (rather than in heavily developed areas). The species is an abundant migrant throughout the Program Renewal Area during the spring and fall.
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains	**Present in Program Renewal Area and Program Renewal Work Areas.** Yellowthroats nesting from the northern San Jose/Milpitas/Santa Clara/Los Gatos area northward, both along the edge of the Bay and in riparian and wetland habitats inland, are likely of the special-status *sinuosa* subspecies, whereas those in areas farther south are likely of the more widespread *arizela* subspecies (Figure 3.4-13). The greatest proportion of breeding records of *sinuosa* in the Program Renewal Area are from brackish and freshwater marshes near the edge of the Bay, and early successional riparian habitat in broader floodplains along lower Coyote Creek and the Guadalupe River (Bousman 2007d). Nests typically are located in extensive stands of bulrushes in brackish marshes and dense cattail beds in freshwater marsh habitat, but also are found in forbs in riparian habitats.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Yellow-breasted chat (*Icteria virens*)	CSSC (nesting)	Nests in dense stands of willow and other riparian habitat	**May be Present in Program Renewal Area and Program Renewal Work Areas.** Rare breeder, and only slightly more regular transient, in willow-dominated riparian habitats in the Program Renewal Area. Historically, it likely bred more widely in Santa Clara County, but it is now rare because of the loss of suitable breeding habitat and brood parasitism in brown-headed cowbirds. In the Program Renewal Area, the species is most numerous and occurs most regularly on lower Llagas Creek, but it has been recorded along Coyote Creek in the vicinity of Hellyer Park upstream, and it likely occurs in low numbers on other streams south of the more urbanized San Jose area. The species occurs as a very scarce migrant throughout the Program Renewal Area during the spring and fall.
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels	**Present in Program Renewal Area and Program Renewal Work Areas.** Endemic to Central and South San Francisco Bay. In the Program Renewal Area, this species occurs in the taller vegetation found along tidal sloughs, including salt marsh cordgrass and marsh gumplant, near the South Bay. The approximate location of the interface between populations of the Alameda song sparrow and those of the race breeding in freshwater riparian habitats (*gouldii*) in Santa Clara County is shown on Figure 3.4-13.
Grasshopper sparrow (*Ammodramus savannarum*)	CSSC (nesting)	Breeds and forages in grasslands, meadows, fallow fields, and pastures	**Present in Program Renewal Area, May be Present Adjacent to Program Renewal Work Areas.** Nests in extensive grasslands with some heterogeneity, including serpentine grasslands. In the Program Renewal Area, breeding birds occur in the foothills of the Santa Cruz Mountains and from Calaveras Reservoir southeast to the hills above Pacheco Creek (Heller 2007). Breeding birds also occur in the southeast portion of the Program Renewal Area, where the hills drop down to the Pajaro River Valley (Heller 2007). Within these areas, nesting individuals may be present where extensive grasslands are located adjacent to Program Renewal Area channels. This species occurs in low numbers in grasslands throughout the Program Renewal Area during migration and winter (Cornell Lab of Ornithology 2024).
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	CSSC	Nests in pickleweed dominated salt marsh and adjacent ruderal habitat	**Present in Program Renewal Area and Program Renewal Work Areas.** Breeds in the Program Renewal Area primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat, and in adjacent ruderal habitat, in the South San Francisco Bay (Rottenborn 2007c). Breeding also has been confirmed in expanses of short grassland in inland/non-instream areas on the west side of the Coyote Valley and in the Santa Cruz Mountain foothills just north of the Pajaro River Valley (Rottenborn 2007c). During the nonbreeding season, *alaudinus* and other savannah sparrow subspecies may forage in open areas throughout the Program Renewal Area.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	CSSC	Medium-high marsh 6 to 8 feet above sea level with abundant driftwood and common pickleweed	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Formerly more widely distributed in the Bay Area. This small insectivorous mammal is now confined to salt marshes of the South Bay (Findley 1955). Salt marsh wandering shrews occur most often in medium-high wet tidal marsh (6 to 8 feet above sea level), with abundant driftwood and other debris for cover (Shellhammer 2000). They also have been recorded occasionally in diked marsh. This species typically is found in fairly tall pickleweed, in which these shrews build nests. Individuals may occur in Program Renewal work areas where suitable habitat is present, especially where this habitat is connected to extensive tidal marshes (Figure 3.4-10).
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Historically, may be present in a number of locations throughout the Program Renewal Area, but this species has declined in recent decades. Known maternity colonies in the Program Renewal Area occur at several locations. Suitable roosting sites are present in a number of other locations, particularly in or near open space or less developed areas around the periphery of the Program Renewal Area, and the species may be more widespread than is known. Individuals could forage in the Program Renewal Area in open areas located within several miles of colonies.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats	**May be Present as Nonbreeder in Program Renewal Area and Program Renewal Work Areas.** No known extant populations are present on the Santa Clara Valley floor, and no breeding sites are known from the Program Renewal Area. Occasional individual Townsend's big-eared bats may roost and forage in suitable habitats nearly anywhere in the Program Renewal Area, but such individuals are expected to occur very infrequently and in small numbers. Roosting colonies are known from the UTC property east of Coyote Ridge near Metcalf Road and at Almaden-Quicksilver County Park. Although both locations are outside the Program Renewal work areas, these records indicate the potential for this species to occur in suitable habitat in the Program Renewal Area, possibly near southern Coyote Ridge and northern Anderson Reservoir or in the Guadalupe Mines area. Individuals are occasionally recorded roosting on the Santa Clara Valley floor, such as in Coyote Valley and Morgan Hill, and near Calero Reservoir.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
Western red bat (*Lasiurus blossevillii*)	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat	**May be Present as Nonbreeder in Program Renewal Area and Program Renewal Work Areas.** Individual western red bats occur in the Program Renewal Area vicinity in low numbers as migrants and winter residents, but this species does not breed in the South Bay. Individual western red bats may roost in the foliage of trees virtually anywhere in the Program Renewal Area, but they are expected to roost primarily in riparian areas.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub	**Present in Program Renewal Area and Program Renewal Work Areas.** This species is locally common on the Santa Clara Valley floor throughout the Program Renewal Area where suitable habitat is present, including within some urban areas. Occurs more regularly along less urbanized reaches of a number of streams, as well as in rural and natural areas on the Valley floor and in the foothills of the Santa Cruz Mountains and the Diablo Range (H. T. Harvey & Associates 2010a).
American badger (Taxidea taxus)	CSSC, VHP*	Burrows in grasslands and occasionally in infrequently disked agricultural areas	**Present in Program Renewal Area and Program Renewal Work Areas.** Known to occur in the Program Renewal Area primarily in grasslands and less frequently disturbed agricultural habitats, mostly in the foothills but sometimes on the Valley floor. The majority of occurrences in the Program Renewal Area are from the Coyote Valley area and northern Morgan Hill (CNDDB 2024). An individual was also observed by Valley Water staff at Slopeview Reservoir in eastern San Jose in 2021. Not expected to establish dens within or immediately adjacent to the Program Renewal Area due to high levels of human disturbance.
State Fully Protected Species			
Golden eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas	**Present in Program Renewal Area, May be Present in Program Renewal Work Areas.** Breeds widely in the Diablo Range and less commonly in the Santa Cruz Mountains, mostly above the elevation of the Program Renewal Area, but a few pairs breed at the edges of the Santa Clara Valley at elevations within the Program Renewal Area (Bousman 2007e). A pair of eagles has also nested in recent years in buffer lands of the San Jose-Santa Clara Regional Wastewater Facility in the Program Renewal Area. Forages somewhat more widely, especially during the nonbreeding season, in agricultural/open space areas on the Valley floor, such as in the Alviso area, in Coyote Valley, and in the Pajaro River watershed. Unlikely to nest in or very close to Program Renewal work areas.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Renewal Area and Program Renewal Work Areas
White-tailed kite (*Elanus leucurus*)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats	**Present in Program Renewal Area and Program Renewal Work Areas.** Nests in northern Santa Clara County in the foothills of the Santa Cruz Mountains, along the edges of the San Francisco Bay from Palo Alto to Milpitas, and in the foothills of the Diablo Range east of Milpitas (Mammoser 2007). Also a fairly common breeder along Llagas and Uvas/Carnadero Creeks and the Pajaro River in southern Santa Clara County. Individuals also nest at scattered locations in the foothills of the Santa Cruz Mountains and the Diablo Range on either side of the urbanized Valley floor, and occasionally in urban areas on the periphery of open foraging habitats. Occurs as a common forager in open habitats throughout the Program Renewal Area during the nonbreeding season.
Ringtail (*Bassariscus astutus*)	SP	Cavities in rock outcrops and talus slopes, as well as hollows in trees, logs, and snags that occur in riparian habitats and dense woodlands, usually in close proximity to water	**May be Present in Program Renewal Area and Program Renewal Work Areas.** Ostensibly suitable habitat is present in forested areas at the upper margins of the Program Renewal Area, but few confirmed records exist. The species has been observed along Summit Road and near Highway 152 just west of Gilroy along Redwood Retreat Road, and it may be present in other areas removed from urbanization. However, given the very low numbers of detections, this species is likely very scarce and localized in occurrence in the Program Renewal Area, and it is likely absent from most Program Renewal work areas, such as valley-floor streams close to urban, suburban, or agricultural activity.
Other Special-Status Species			
Pacific harbor seal (*Phoca vitulina richardsi*)	MMPA	Found throughout the northern Atlantic and Pacific Oceans along coastal waters, river mouths, and bays	**May be Present in Program Renewal Area and Program Renewal Work Areas.** Permanent resident of the San Francisco Bay, where a primary haul-out site is located at Mowry Slough northeast of the Program Renewal Area. Suitable haul-out sites for harbor seals are present in the Program Renewal Area in the tidal reaches of sloughs in the South Bay, and use of haul-out sites varies over time. No pupping sites are currently known within the Program Renewal Area, although potentially suitable pupping habitat is present.

[1] Federal, State, and Local Status Definitions:

Federal

FE Endangered under the Federal Endangered Species Act (FESA)

FT Threatened under FESA

FPE Proposed for listing as endangered under FESA

FPT Proposed for listing as threatened under FESA

FC Candidate for listing under FESA

MMPA	Species Protected under the Marine Mammal Protection Act
State	
SE	Endangered under the California Endangered Species Act (CESA)
ST	Threatened under CESA
SC	Candidate for Listing under CESA
SP	State Protected
CSSC	California Species of Special Concern
Local	
VHP	Covered under the Santa Clara Valley Habitat Plan (VHP)
VHP*	Expected to be covered under a future VHP amendment

Source: Data compiled from sources cited in individual rows in the table above by H.T. Harvey & Associates in 2024

Sensitive Natural Communities, Vegetation Alliances, and Habitats

Waters of the U.S./Waters of the State

As described in Section 3.4.2 "Regulatory Setting" above, impacts to wetlands and other waters of the U.S. are regulated under CWA Section 404, and impacts to waters of the state are regulated under CWA Section 401, CWA Section 403, and the Porter-Cologne Water Quality Control Act. A number of aquatic and wetland features throughout the Program Renewal Area are expected to be considered waters of the U.S. by the USACE and waters of the state by the RWQCB. These features include the riverine, wetland, and open water land cover types described above, as well as tidal and intertidal habitats. Many of these regulated waters are unvegetated "other waters," including areas of open waters. However, regulated areas supporting vegetated wetlands, including coastal and valley freshwater marsh, seasonal wetland, and tidal and intertidal habitats, are also present. The precise extent to which these features are jurisdictional waters of the U.S./state will be determined by Valley Water in jurisdictional delineations performed during the course of the Program Renewal and verified by the USACE and RWQCB as necessary.

Whereas USACE jurisdiction over waters of the U.S. extends upslope only as far as the ordinary high water mark along streams and other waterbodies in the Program Renewal Area, the RWQCB may claim jurisdiction over riparian habitats (e.g., riparian forest and scrub land cover types) located farther upslope to the top of bank or the outer edge of the canopy of riparian vegetation rooted below top of bank, whichever is greater, as waters of the state. In addition, per the *Sackett v. Environmental Protection Agency* U.S. Supreme Court decision and subsequent federal regulations implementing this decision, USACE jurisdiction is limited to wetlands having a continuous surface connection with traditional navigable waters, whereas RWQCB jurisdiction may include wetlands that are not connected to traditional navigable waters. Therefore, the extent of waters of the state in the Program Renewal Area is greater than the extent of waters of the U.S.

Beds and Banks Regulated Under California Fish and Game Code Sec. 1600 et seq.

As described in Section 3.4.2 "Regulatory Setting" above, the CDFW regulates diversions or activities that alter the bed and banks of rivers, lakes, and streams in California. In the Program Renewal Area, features whose alteration would be regulated by the CDFW under Section 1600 of the F&G Code include the riverine (streams) land cover type; ponds that are in-line with streams (e.g., Almaden Lake); and coastal and valley freshwater marsh, seasonal wetland, riparian habitats, and tidal habitats associated with those features. In general, CDFW jurisdiction over such features extends upslope to the top of bank or the outer edge of the riparian canopy, whichever is greater.

Other Sensitive Habitats

OAK WOODLANDS

Oak woodlands, which in the Program Renewal Area include the valley oak woodland, mixed oak woodland and forest, blue oak woodland, and coast live oak forest and woodland VHP land cover types, are considered one of California's most productive and important natural communities. They support a rich plant and wildlife community, supporting high numbers of mammal and bird species. In addition, oak trees play an important role in helping to maintain water quality in streams and rivers by reducing erosion, yet more than a million

acres of oak savannah and oak woodlands in California are estimated to have been lost since 1945. Major factors contributing to the loss of oak woodlands include urban growth, conversion to agriculture, lack of regeneration of oak trees, and habitat fragmentation. As a result, numerous state and local agencies have established guidelines, regulations, and ordinances regarding the conservation of oak woodlands (e.g., Oak Woodlands Conservation Act [Fish and Game Code Section 1360-1372] and Senate Bill 1334.

CDFW SENSITIVE NATURAL COMMUNITIES

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program Renewal in 1979. The CDFW determines the level of rarity and imperilment of vegetation types and tracks sensitive communities in its Rarefind database (CNDDB 2024). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings are a reflection of the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage Program Renewal methodology as follows:

G1/S1: Critically imperiled

G2/S2: Imperiled

G3/S3: Vulnerable

G4/S4: Apparently secure

G5/S4: Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2024a). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2024a). Within the Program Renewal Area, a number of sensitive associations may occur within the following habitat types: non-serpentine native grassland; serpentine rock outcrop/barrens; serpentine bunchgrass grassland; coyote brush scrub; northern coastal scrub/Diablan sage scrub; northern mixed chaparral/chamise chaparral; mixed serpentine chaparral; valley oak woodland, coast live oak woodland, mixed oak woodland and forest, and blue oak woodland; willow riparian forest and scrub; central California sycamore alluvial woodland; mixed riparian woodland and forest, coastal and valley freshwater marsh, and seasonal wetland. CDFW sensitive natural communities known or likely to occur within the Program Renewal Area are serpentine bunchgrass grassland, seasonal wetland, and sycamore alluvial woodland (CNDDB 2024, Holland 1986, Sawyer et al. 2009).

Northern coastal salt marsh once occurred extensively in the tidally influenced lowlands surrounding San Francisco Bay but is now located in tidal saline habitats only at the extreme northern edge of the Program Renewal Area. In the South Bay much of this habitat was reduced from historical conditions due to filling for development, landfills, and other uses;

installation of flood protection structures which remove or mute tidal influence; and construction of levees to create managed ponds in areas that used to be extensive marshes. This community supports a wide variety of plant and animal species specifically adapted to the dynamic hydrologic conditions and high salinities that occur within tidally influenced areas, including federally endangered species such as the salt marsh harvest mouse.

Although maintenance activity areas will not geographically overlap areas of serpentine, they may occur adjacent to serpentine habitats. Serpentine bunchgrass generally supports native plant communities including rare plants such as the federally endangered and CRPR 1B.1 Santa Clara Valley dudleya and Metcalf Canyon jewel-flower as well as the CRPR 1B.2 most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*) and smooth lessingia. Several invertebrate species, including the federally threatened Bay checkerspot butterfly, depend on serpentine grasslands because their host food plants are found primarily in these habitats. Likewise, serpentine outcrops/barrens, serpentine chaparral, and serpentine seeps are considered sensitive communities because of their importance to serpentine-endemic plants and invertebrates and their limited regional distribution (ICF International 2012). In the Program Renewal Area, serpentine communities occur primarily on either side of the Santa Clara Valley, from Coyote Ridge to the east and the Santa Teresa Hills to the west south to the San Martin area. Smaller patches of serpentine grassland occur elsewhere, such as on Communications Hill, Tulare Hill, and north of Alum Rock Park in San Jose.

Seasonal wetlands are sensitive wetland habitats that experience seasonal wetland hydrology. Often these habitats are in depressions that collect surface runoff during storms in the rainy season, only ponding or exhibiting saturated soils for a number of weeks or months during the year. Other seasonal wetlands may be fed by seasonally high groundwater associated with seasonal seeps and intermittent streams. These habitats are sensitive because they provide important seasonal habitat for wetland species, and when wetted, wetland functions and values related to water storage, groundwater recharge, and maintenance of local water quality. Seasonal wetlands can vary greatly in terms of plant composition depending on their location, hydrologic regime, hydroperiod, and whether the source water and soils are brackish or fresh/neutral, but these habitats are dominated by hydrophytic plant species.

Central California sycamore alluvial woodland occurs along low, braided channels in areas with wide floodplains. The community is dominated by western sycamore trees with a sparse understory, and the substrate tends to be cobbly or gravelly and scoured frequently by spring run-off events. Although sycamore alluvial woodlands were once more broadly distributed in California, they have experienced severe declines due to development of Valley floor areas and alterations in hydrology at suitable sites, typically caused by flood protection improvements along drainages supporting sycamore stands. Sycamore alluvial woodland occurs sparsely in the Program Renewal Area, with the best examples of this community occurring along Coyote Creek between U.S. Highway 101 and the Ogier Ponds and along Pacheco Creek east of Gilroy.

Wildlife Movement and Habitat Connectivity

Habitat connectivity is vital to animals for maintaining connections between core habitat areas (i.e., larger intact habitat areas where species typically reside). Connectivity helps ensure that genetic diversity is maintained by allowing individuals to disperse and share genes between populations, thereby diminishing the probability of inbreeding depression,

and helps to maintain populations, as individuals from larger or more productive populations can disperse to areas where populations are lower. This helps to ensure that populations are more widely dispersed rather than being confined to fewer, more limited areas where disease, large disturbances such as extensive fires, or random events could cause extirpation (local extinction). Connectivity is especially important in landscapes fragmented by urban development and agricultural activities.

Streams and rivers in the Program Renewal Area function as corridors for wildlife movement. Aquatic species such as fish, aquatic invertebrates, stream amphibians, and northwestern pond turtles use streams to move throughout the landscape. Riparian vegetation associated with streams provides habitat for resident animals of a variety of taxa. Such vegetation provides connectivity within and among populations by allowing genes and individuals to move throughout stream systems as breeding occurs. In addition, riparian vegetation provides migratory stopover habitat for birds and provides cover for animals undergoing long-distance terrestrial dispersal. Other natural habitats (e.g., oak woodlands and scrub) throughout the Program Renewal Area also function as pathways for terrestrial wildlife movement that allow animals to move along these areas.

A variety of animals, including amphibians, reptiles, mammals, and birds, move in a northwest-southeast direction along the western edge of the Diablo Range foothills and the eastern edge of the Santa Cruz Mountain foothills in the Program Renewal Area. In addition, animals move in an east-west direction across Coyote Valley and along the Pajaro River between the Santa Cruz Mountains and the Diablo Range. East of Gilroy, additional linkages are identified from Henry W Coe State Park south to San Felipe Lake and San Benito County. The ability of animals to be able to move – either over generations, in the case of less mobile animals, or during long-distance dispersal events for birds, bats, and larger mammals – across Coyote Valley and intermix and breed with genetically unrelated members of the species is important to the maintenance of populations of many species in the Diablo Range and Santa Cruz Mountains. Coyote Valley represents the highest-quality linkage between these two mountain ranges because the foothills of both ranges come so close together at North Coyote Valley and because the mostly undeveloped nature of North Coyote Valley allows wildlife movement with limited impediments.

Nursery Sites

Nursery sites (i.e., areas with very high densities of breeding individuals) of native wildlife species in the Program Renewal Area are represented primarily by colonial nesting birds. Nesting colonies of great egrets, snowy egrets, great blue herons (*Ardea herodias*), and black-crowned night herons (*Nycticorax nycticorax*) occur along sloughs on the periphery of the San Francisco Bay as well as inland along streams and on pond and reservoir islands throughout the Program Renewal Area. From 1987–2005, approximately 19 great blue heron colonies were known from Santa Clara County, with 3–8 active colonies in a given year (Bousman 2007g). In addition, approximately nine colonies of great egrets, ten colonies of snowy egrets, and nine colonies of black-crowned night herons were active in various years from 1987–2005 in the Program Renewal Area (Bousman 2007h, Bousman and Strong 2007a, and Bousman and Strong 2007b). As of 2020, approximately 10 colonies of great blue herons, 12 colonies of black-crowned night herons, 12 colonies of great egrets, and 10 colonies of snowy egrets (many of which were the same colony supporting multiple species) were known from the Program Renewal Area (San Francisco Bay Bird Observatory 2020).

However, not all of these colonies have been active in recent years (S. Rottenborn, personal observation).

Few colonies of great blue herons persist in Santa Clara County for more than a few years, and few colonies exceed 5–10 nests (Bousman 2007g). Great blue herons typically nest in large trees in the Program Renewal Area, such as eucalyptus and cottonwood (Bousman 2007g). In contrast, great egrets, snowy egrets, and black-crowned night herons nest in more variable substrates such as eucalyptus trees, thick bulrushes, saltbush, and palm trees (Bousman 2007h, Bousman and Strong 2007a, and Bousman and Strong 2007b). Their colony sizes often consist of small numbers of nests, but can be larger, with counts of up to 40 nests of black-crowned night herons, 114 nests of snowy egrets, and 90 nests of great egrets (Bousman 2007h, Bousman and Strong 2007a, and Bousman and Strong 2007b).

3.4.4 Impact Analysis

Methodology

Impact Assessment

This impact analysis focuses on potential effects of maintenance activities on biological resources during the period from 2027 to 2036 based on existing baseline conditions in the Program Renewal Area, which on a broad scale are defined as the existing conditions at the time of the publication of the 2022 Notice of Preparation. On a finer scale, existing conditions are represented by the habitat conditions present in maintenance activity areas at the time that maintenance occurs. Maintenance activities have been ongoing regularly within many portions of the Program Renewal Area under Stream Maintenance Program 2002–2012 (SMP-1) and SMP-2, and these activities may influence the habitat conditions present at the time that maintenance activities occur. However, this analysis does not assume that Program Renewal Areas have been recently or previously disturbed (i.e., it is not assumed that ongoing SMP-2 disturbance is part of the baseline); rather, any influence of prior maintenance influences the magnitude of the Program Renewal impacts). Existing conditions in the Program Renewal Area are described in Section 3.4.3 above.

Potential Program Renewal impacts on biological resources were systematically evaluated both at the Program Renewal level and cumulatively. In the sections below, impacts are first evaluated without considering implementation of Program Renewal avoidance and minimization measures (i.e., Valley Water BMPs and VHP conditions) to describe qualitatively how Program Renewal activities could impact biological resources. Then, the significance of each impact is evaluated with application of the Program Renewal BMPs and VHP conditions (as applicable). For those impacts that remain significant even with implementation of Program Renewal BMPs and compliance with VHP conditions, feasible mitigation measures are identified, and the significance of the impacts is then re-evaluated to determine if compensatory mitigation reduces impacts to a less-than-significant level. Any impacts that remain significant with implementation of compensatory mitigation would be described as significant and unavoidable.

Biological resources in the Program Renewal Area may be affected not only by maintenance activities but also, in a few cases, by mitigation measures and Program Renewal BMPs. These mitigation measures and BMPs would, overall, reduce or avoid significant impacts; however, in a few cases, adverse effects may occur from implementation of the mitigation measures

and BMPs themselves. For example, although relocation of special-status fish, reptiles, and amphibians from work areas may be necessary to avoid mortality of those individuals, some injury or mortality may occur during relocation. As a result, the effects of the BMPs and the mitigation Program Renewal are also analyzed, where appropriate.

In general, the primary adverse effects of the Program Renewal on biological resources would occur at the time that maintenance activities take place, and during the period immediately following maintenance activities. Potential Program Renewal impacts are expected to include direct and indirect adverse effects on riparian, wetland, and instream habitats; effects on adjacent non-instream habitats (e.g., maintaining access routes); impacts on associated plant communities and wildlife species; and potential degradation of water quality. While many of these effects will be of short duration (e.g., where herbaceous vegetation will regrow following the impact), in some cases maintenance activities would result in longer-term effects. In addition, many short-term impacts will be repetitive, occurring a number of times during the 10-year period covered by the Program Renewal. For the purpose of this assessment, impacts are considered temporary if the vegetation, wetlands, and other waters that were affected would restore naturally if management were to cease. For the majority of the Program Renewal, the effects of maintenance activities would be largely temporary in any specific area. However, where Program Renewal activities occur in one location repeatedly and do not allow for regeneration of these resources, or where Program Renewal activities result in the permanent exclusion of vegetation or permanent conversion of existing natural areas to developed areas (e.g., by hardening banks), longer-term effects would result. Several characteristics of the Program Renewal and Program Renewal Area complicate the quantification of impacts to biological resources that would occur. These are as follows:

- A specific reach of creek may be subject to several types of activities, either simultaneously or in succession. For example, a reach may undergo sediment removal one year, followed by herbicide application the next year. Vegetation management activities also may target only instream areas, only non-instream areas (such as levees), or some combination of instream, bank/bench, and levee areas. The different combinations of maintenance activities that may occur along a specific reach of creek is not necessarily predictable, as many of these activities are performed on an as-needed basis.
- Valley Water has projected potential sediment removal activities along 141.4 miles of streams in the Program Renewal Area (26.7 miles within permanently mitigated area [PMAs]), aquatic herbicide application along 311.8 miles of streams (105.9 miles within PMAs), and vegetation removal (defined as the removal of vegetation, including trees <6" diameter at breast height [dbh]) along 311.8 miles of streams (71.9 miles within PMAs). However, these maintenance activities may not occur exactly where and to the extent they are projected. Experience from SMP implementation over the past two decades (i.e., the 2002–2012 SMP-1 and 2013–2023 SMP-2) indicates that some maintenance activities are likely to be required in areas where they are not currently projected (with much lower likelihood), and some reaches where activities are projected would not actually be subjected to maintenance. Furthermore, while the projected work locations illustrate the geographic areas where maintenance activities are most likely to occur, the total area in which SMP-1 and SMP-2 activities have occurred since 2002 has been substantially less than projected for each of those Program Renewals. Due to this,

as well as the biological avoidance and minimization measures that Valley Water implements through its BMPs, impacts from 2027–2036 Program Renewal activities are expected to be less extensive than projected.

- The Program Renewal projections include aquatic herbicide application and vegetation management (these two activities are projected to occur in the same locations) along 311.3 miles of streams, and sediment removal along 141.4 miles of streams. Within the projected work areas, the locations where each maintenance activity will occur are not specifically known. The locations and extent of maintenance activity impacts will ultimately be identified on an activity-by-activity basis as work is performed, and quantified and reported on an annual basis.

Given these complications, impacts of the Program Renewal on biological resources are estimated as accurately as possible and described qualitatively in order to support this assessment. The approach taken to estimate and describe Program Renewal impacts on biological resources in this analysis is as follows:

This analysis describes qualitatively the types of impacts on biological resources that could occur as a result of 2027–2036 Program Renewal activities.

Rather than providing specific quantitative measures of Program Renewal impacts on biological resources, this analysis broadly estimates the expected locations and potential magnitude (typically the maximum extent/amount) of potential Program Renewal impacts, based on (1) projections of sediment removal, in-stream vegetation management, and aquatic herbicide application activities during 2027-2036; (2) assumptions regarding the anticipated extent of impacts within the projected reaches, provided by Valley Water (provided as applicable with the estimated impact acreages in Tables 3.4–3.15 below); and (3) experience from the SMP-1 and SMP-2. Valley Water expects the extent of impacts from SMP-2 and Program Renewal maintenance activities to be similar, and less extensive than the extent of the Program Renewal projections. Significance determinations are based on the impact estimates made as described above, and the type of and need for compensatory mitigation has been determined accordingly.

Although the biological resources in some areas may have been affected by maintenance activities in the past, the discussion of the impacts that could result from Program Renewal activities is applied to biological resources in all impact areas, regardless of whether or not maintenance has recently occurred along a particular reach (i.e., the most conservative approach is assumed).

In-perpetuity mitigation has previously been provided within PMAs in the Program Renewal Area where impacts of certain maintenance activities occur repeatedly. The frequency and magnitude of Program Renewal impacts within PMAs varies, and while biological resources within some PMAs may be adversely affected by repeated impacts, biological conditions within many PMAs are minimally affected and are similar to areas located outside of PMAs. Thus, for the purpose of this assessment, it is conservatively assumed that biological conditions within and outside of PMAs are similar.

To estimate Program Renewal impacts on habitat for special-status species, the proportion of the projected work that falls within each species' range was calculated in geographic information systems (GIS) and used to scale the estimated impacts for the entire Program

Renewal Area (provided in Table 3.4 under "General Discussion of Impacts of Program Renewal Activities on Biological Resources" below) for that species.

In addition, a substantial proportion of maintenance activities will be scattered throughout impact areas and will be relatively limited in extent and/or infrequent. Prior to conducting maintenance activities, Valley Water conducts field inspections that inform where the maintenance activities need to be prioritized and targeted along a given reach. Valley Water then provides its best estimates of the extent of impacts within each reach based on an estimate of a more targeted approach, as opposed to working along the entire reach. As a result, impacts within the Program Renewal Area will typically not result in the complete removal of habitat areas; rather, temporary impacts, focused impacts in certain locations, and thinning of vegetation typify the majority of Program Renewal impacts.

Estimates of Program Renewal impacts on biological resources are provided under "Quantification of Impacts" below, as well as under individual impact sections (e.g., Impact BIO-1).

Mitigation Approach

Valley Water is the primary steward of the resources on its lands. Reflecting this, Valley Water's ends policy goals include "Use a science-based, inclusive approach to protect Santa Clara County's watersheds and aquatic ecosystems for current and future generations" and "Sustain ecosystem health while managing local water resources for flood protection and water supply." In alignment with this stewardship role, Valley Water conducts some Program Renewal activities that have the primary goal of ecological benefit. In some cases, these activities may also provide multiple benefits. This work may include, but is not limited to, activities such as invasive plant management, vegetation management for ecological health, and installation or modification of physical features to provide habitat function. The scale of work that Valley Water does under the Program Renewal for ecological benefit will depend on identification of need for this work, availability of staff time and budget, balance with other Valley Water goals, compliance with permit conditions, and other factors. However, there is potential for Valley Water to conduct ecologically beneficial work under the Program Renewal throughout all Valley Water lands that are covered by the Program Renewal. Because such activities are considered environmentally beneficial, they are not expected to require mitigation. Maintenance activities that are performed to meet the goals and objectives of a land management plan or revegetation site would also not require mitigation. In addition, the majority of sediment removal, in-stream herbicide application, and in-stream vegetation management will occur within existing PMAs. If in-perpetuity mitigation has already been provided for impacts of a particular activity along a given reach (e.g., in a PMA), no additional mitigation is required for conducting the same activity along that reach. However, mitigation may be required for conducting a different maintenance activity along that reach. For example, if mitigation was previously provided in perpetuity only for sediment removal along a given reach, no additional mitigation for sediment removal along that reach would be required, but mitigation for vegetation management activities along that reach would be necessary. PMA mitigation does not apply to Program Renewal impacts on special-status species or their habitats.

To determine mitigation needs, Valley Water will quantify Program Renewal impacts on biological resources, such as the acreage of impacts to wetlands and riparian habitats, sensitive communities, and special-status species' habitats, on an annual basis as work is

performed from 2027–2036. Valley Water will tally the impacts of Program Renewal activities for a specific year at the end of each year. These impact calculations will then be used as the basis for determining mitigation to be provided at either that year's end or the following year. This annual analysis will clearly distinguish where activities occurred (e.g., in a PMA versus in new areas for which mitigation is required).

For purposes of CEQA compliance, after implementation of Valley Water's BMPs (for all activities) and VHP conditions and fees (for VHP-covered activities), if residual impacts from maintenance activities remain significant, Valley Water will provide compensatory mitigation for impacts on biological resources via the following approach, as described in detail in Chapter 10 of the SMP Manual, to reduce impacts of Program Renewal activities to less-than-significant levels, where feasible:

- The majority of Program Renewal impacts that require mitigation will be covered under the VHP once it is amended. Impacts of VHP-covered activities will be mitigated via the payment of VHP fees and compliance with VHP conditions. The USFWS and CDFW have approved VHP compliance (including payment of VHP impact fees) as providing adequate mitigation for impacts of VHP-covered activities on VHP-covered species. The USACE and RWQCB have approved the VHP In Lieu Fee Program to allow for impacts to waters of the U.S. and waters of the state to be mitigated by payment of VHP impact fees by applicants and creation and restoration of appropriate aquatic, wetland, and riparian land cover types by the Habitat Agency. The VHP specifically sets biological goals for land cover types that constitute jurisdictional resources and serves as both an approved In Lieu Fee Program and as a landscape and watershed-level framework for compensatory mitigation for impacts to jurisdictional waters.
- Certain Program Renewal activities will not be covered under the VHP. These are aquatic herbicide application, activities located within tidal areas (which are located outside of the VHP permit area), and Program Renewal activities that occur within the time before the VHP amendment is approved. Impacts of Program Renewal activities on fish are also not covered under the VHP. Valley Water proposes to mitigate impacts of non-VHP covered activities as follows:
    - The need to provide mitigation for impacts due to habitat removal from herbicide application will be assessed on a case-by-case basis. All but 9 acres, or 1.6 percent, of estimated herbicide impacts would occur in PMAs where mitigation has already been provided (Table 3.4-5). Based on experience from SMP-2, Valley Water anticipates that the majority of the 9 acres of herbicide-related impacts located outside of PMAs will be beneficial and, as discussed above, mitigation would not be required. For example, aquatic herbicide application may be used to maintain emergent vegetation by removing willow saplings or invasive plants. Aquatic herbicide application may also be applied only to very limited areas within an extensive area of habitat such that no substantive habitat removal or type conversion (and therefore no substantive impact) occurs. A substantial adverse effect would only occur if aquatic herbicide application results in a substantial reduction in habitat quality for wildlife, particularly due to the loss of high-quality wildlife habitat, in the opinion of a qualified biologist. As discussed in Chapter 4 of the SMP Manual, a biologist will evaluate areas targeted for herbicide application to identify any concerns

about the potential reduction in habitat for sensitive species. If the biologist determines based on the vegetation removed relative to the remaining vegetation that the use of aquatic herbicide has resulted in a substantial reduction in high-quality habitat, Valley Water will provide mitigation for this activity at a 1:1 (impact:mitigation) ratio on an acreage basis via trash cleanup or seeding the vegetation removal area with an appropriate seed mix.

- To mitigate impacts due to the loss of habitat from in-stream vegetation management and sediment removal activities (i.e., activities for which PMAs are proposed), Valley Water will acquire and conserve land and/or utilize existing mitigation credits through the establishment of PMAs as its primary approach. Most Program Renewal impacts that occur outside of existing PMAs will be limited in extent and not repeated in the same location, and new PMAs would not be created for such impacts (rather, they would be mitigated via one of the other options listed here, as appropriate). New PMAs will be created for areas where maintenance activities occur repeatedly at the same location (e.g., at a bridge crossing); such locations will be identified as the Program Renewal is implemented. This PMA mitigation will not be used to mitigate Program Renewal impacts on state and federally listed species or their habitats (discussed separately below).
- Because establishing new PMAs will be a work in progress at the start of the Program Renewal, Valley Water will initially provide mitigation for impacts due to the loss of habitat from in-stream vegetation management and sediment removal activities on an annual basis based on annual impact estimates, which will later be trued-up based on actual impacts. This is consistent with the SMP-2 mitigation approach. During this period, compensatory mitigation will be provided using on-site and off-site ecological services-based mitigation consisting of native plant revegetation, removal of trash and pollutants from encampments, and rehabilitation of encampment-related excavated banks.
- Impacts of maintenance activities for which PMAs are not proposed (i.e., bank stabilization, management of animal conflicts, and certain minor maintenance activities) will be mitigated on an as-needed basis using defined mitigation ratios as maintenance activities occur. Mitigation options for these activities are as described in the bullet above (i.e., on-site and off-site ecological services-based mitigation and use of remaining credits).
- Impacts of maintenance activities on nontidal regulated habitats including wetlands, other waters, and riparian habitats may be mitigated via the payment of fees to the Habitat Agency via the Habitat Agency's Voluntary Fee Payments Policy. This option is subject to consistency with VHP requirements and Habitat Agency approval, and contingent on the Habitat Agency agreeing to use Valley Water's fees to provide mitigation for the resource being impacted (e.g., wetlands, aquatic habitats, or riparian habitat).
- Direct impacts on state and federally listed species that are not covered under the VHP, including fish, will be avoided and minimized through

implementation of BMPs. Any residual impacts of non-VHP-covered Program Renewal activities will be mitigated via (1) gravel augmentation, construction of instream complexity (for fish); (2) payment of fees to the Habitat Agency via the Habitat Agency's Voluntary Fee Payments Policy (for impacts on species covered by the VHP and their habitats), or (3) land acquisition-based and habitat creation mitigation, including future projects and use of remaining credits from completed mitigation projects.

- As mitigation for impacts to tidal habitats and tidal marsh species was predicted to result from the 2002–2012 SMP, Valley Water restored the "Island Ponds" (Ponds A19, A20, and A21), located between Coyote Slough and Mud Slough near Alviso, to tidal action. Monitoring has documented the formation of tidal marsh habitat, including extensive channel networks, within these ponds. Thirty acres of tidal restoration within the Island Ponds was intended to serve as mitigation for impacts to tidal habitats for the 2002–2012 SMP. However, based on the actual impacts from 2002–2012 SMP activities, only 9 acres of tidal mitigation was needed to compensate for those impacts. An additional 1,407 square feet (<0.1 acre) of tidal mitigation was needed to compensate for impacts from 2012-2024 SMP activities. Therefore, more than 8.9 acres of restored tidal marsh are available to mitigate tidal impacts from Program Renewal activities. Valley Water will debit any tidal habitat mitigation needs for Program Renewal activities from the remaining acreage of tidal restoration at the Island Ponds.

Annual reports summarizing Program Renewal impacts and associated mitigation needs will be prepared by Valley Water for documentation of compliance with CEQA mitigation requirements, and also for submittal to applicable resource agencies such as the USFWS, NMFS, CDFW, USACE, RWQCB, BCDC, and Habitat Agency.

Mitigation Feasibility Assessment, Monitoring, Reporting, and Success Criteria

Mitigation Feasibility Assessment

The success criteria for revegetation mitigation projects would carefully consider existing site conditions and constraints. The Mitigation Feasibility Assessment (MFA) Field Protocol (*Appendix F*) process described herein was designed to provide a consistent assessment methodology that can guide mitigation design and success criteria based on what type, degree, and quality of revegetation the site will support.

The MFA process begins with a broad evaluation of the existing conditions at the mitigation site. Depending on the activity and on-site conditions, the target mitigation site may be at the same location where the work will occur, or it may occur at an off-site location. The MFA assessment includes evaluating site hydrology, flow velocity, soils and soil moisture, aspect, slope, adjacent land use, site access, presence of invasives, presence of rare/listed species, maintenance needs, animal damages, human activity, and the potential revegetation design. Based on this assessment, the site is categorized as having either a high, medium, or low revegetation potential. Each of these categories is based on the presence or absence of existing opportunities and constraints at the site. Planting species appropriate to the site conditions can promote a more successful and efficient revegetation Program Renewal. If a site is identified as having poor conditions yet is still desirable to plant, lower success

criteria will be established to account for the poorer site conditions. This will enable some replanting prior to seeking off-site mitigation. If the MFA identifies the work location as a highly constrained site, then off-site mitigation will be considered to ensure greater revegetation success.

The MFA process is designed to provide ecologically feasible mitigation success criteria, given site specific conditions and the proposed revegetation palette. Valley Water may support revegetating a highly constrained creek bank that will rarely meet typical success criteria. Therefore, lower success criteria will be allowed to facilitate replanting on ecologically challenging sites. Project sites with fewer constraints will meet standard success measures more easily and will continue to be held to those higher standards.

MITIGATION MONITORING

All monitoring Program Renewals are intended to be adaptively managed and implemented in conjunction with input and support from regulatory agencies.

Monitoring Protocols

Since the SMP inception in 2002, Valley Water has developed surveying and monitoring protocols as part of the routine implementation of the SMP. Valley Water conducts annual field inspections of their streams to determine the needs for maintenance activities. Valley Water tracks all maintenance activities conducted by stream reach, and all restoration and mitigation efforts implemented to address maintenance impacts. Valley Water maintains an extensive database, including a GIS mapping database, to document and track annual maintenance and mitigation activities. Valley Water's existing monitoring protocols and corresponding databases will meet the monitoring needs of the updates to the mitigation for the Program Renewal as described in the MFA. For proposed new mitigation efforts not directly addressed by an existing monitoring protocol (or entry into the existing database system), Valley Water will expand the database and develop monitoring protocols.

Monitoring for species-specific mitigation projects will be conducted as directed by regulatory permit conditions and guidance provided in BOs.

Duration of Revegetation Mitigation Monitoring

Monitoring revegetation mitigation project sites that involve restoration plantings will be conducted for five (5) years following planting, or until success criteria are met. Success criteria will be determined though the MFA as described above. Information collected on restoration plantings will include the number and species planted at each site, square footage of area planted, estimated percent canopy cover, number or percent of planted trees and shrubs surviving, and observations on whether recolonization of invasives occurs after removal. Note that percent cover canopy will not be reported likely until year 5 or at which time canopy has developed significantly enough to describe.

Instream complexity and gravel augmentation projects will be monitored annually up to five years, to evaluate and describe their functioning.

Success Criteria for Plantings

Success criteria for shrubs and trees planted in riparian areas will be determined though the MFA process. In the event of poor plant survival, corrective measures will include replanting to reach the pre-determined success criteria, via the MFA, as needed based on scheduled monitoring activities. Such remedial measures will be monitored for a 5-year period following implementation to ensure that the project is successful. For instance, if remedial activities were taken during the fifth year after project implementation, monitoring of these remedial measures would continue until year 10. If they did not meet performance criteria at that point, additional measures would be required or new mitigation would be provided elsewhere should a project not be capable of meeting performance criteria.

Success criteria for riparian planting and revegetation projects are described in the MFA implementation document (*Appendix F*).

Mitigation Reporting

Mitigation planning, design, implementation, and monitoring activities will be notified and reported to the relevant permitting agencies through the course of the regular Program Renewal communications, including submittal of the Program Renewal annual Notice of Proposed Work (NPW) and Post-construction Report (PCR). These reports will include a discussion of mitigation activities associated with the Program Renewal.

Mitigation information to be included in the NPW will include a description of mitigation activities planned for the coming year including locations, lengths, areas, and other project details. The NPW will also include a schedule for implementing mitigation activities and a statement describing the status of permit approvals necessary to perform project (if applicable). As needed, reporting for land acquisition and restoration projects will include a description of how the proposed off-site mitigation will address Program Renewal related impacts.

Permitting agencies will have the opportunity to review and comment on the proposed annual mitigation plan. The Program Renewal annual mitigation plan will be consistent with the mitigation approaches and requirements described in this document and the SMP Manual.

Each year, Valley Water will submit a PCR on Program Renewal activities including summary descriptions of the maintenance activities conducted in the past year. The annual report will also include status reporting on the Program Renewal's mitigation activities, including the submittal of follow up monitoring reports from previous mitigation projects. The mitigation activity section of the PCR will include a comparison with success criteria and describe efforts to meet those criteria. Individual tree replacement planting for the removal of 6-12 inch dbh trees will be reported annually through the PCR.

Reporting requirements will apply according to the duration of monitoring requirements, as described above. Once projects have fulfilled the 5-year monitoring requirement and meet the appropriate success criteria, they would no longer need to be reported in the annual PCR.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Program Renewal would result in a significant impact on biological resources if it would:

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, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

C. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, 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; or

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.

Specifically, the significance criteria used for the analysis of impacts on biological resources are:

- Under Criterion A, have substantial adverse effects on special-status species, as follows (Impact BIO-1):
  - Special-status plants and invertebrates (Impacts BIO-1A through BIO-1C)
  - Special-status vertebrates (Impacts BIO 1-C through BIO-1Y)
  - Non-special-status animals (Impact BIO-1Z)
- Under Criterion B, have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS, as follows (Impact BIO-2):
  - Riparian habitat (Impact BIO-2A)
  - Other sensitive plant communities (Impact BIO-2B)
- Under Criterion C, have a substantial adverse effect on state or federally protected wetlands, as follows (Impact BIO-3):
- Under Criterion D, result in substantial interference with wildlife movement or use of native wildlife nursery sites (Impact BIO-4)

- Under Criterion E, result in any conflict with local policies or ordinances protecting biological resources (Impact BIO-5)
- Under Criterion F, result in any conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or State HCP (Impact BIO-6)

General Discussion of Impacts of Program Renewal Activities on Biological Resources

The following sections describe generally how Program Renewal activities may impact biological resources within the Program Renewal Area. For some impacts, more detail is provided here than in the individual impact discussions that appear later in this section (i.e., Impact BIO-1, BIO-2, etc.) to reduce redundancy. For example, the general discussions of how Program Renewal activities may affect birds apply to the impact sections for the least Bell's vireo, yellow warbler, yellow-breasted chat, burrowing owl, golden eagle, bald eagle, and other birds. Thus, these general discussions are referenced in each impact section to reduce redundancy; those impact sections then provide additional detail regarding impacts on each biological resource, as appropriate.

A general discussion of impacts of the Program Renewal on each resource type (e.g., sensitive habitats, plants, and wildlife) is provided below for each Program Renewal impact type, with the exception of minor maintenance activities and downed tree management, as follows:

- Minor maintenance activities, which are described in Section 2.5.6, may occur throughout the Program Renewal Area, and greater than 100 minor maintenance activities currently occur each year. Any minor maintenance activity typically would affect only a very limited area and, therefore, impacts on biological resources likewise typically would be limited in extent. Minor maintenance activities would have impacts similar to those that would result from other categories of Program Renewal activities (i.e., bank stabilization, sediment removal, vegetation management, and management of animal conflicts), but at a much smaller scale. Therefore, the discussions of how bank stabilization, sediment removal, vegetation management, and management of animal conflicts would affect biological resources pertain to similar minor maintenance activities.
- Downed tree management includes activities that are similar to vegetation management, such as cutting and removal of (downed) trees and access with heavy equipment and/or mechanized equipment. Therefore, the discussions of how vegetation management would affect biological resources pertain to similar minor maintenance activities. However, downed tree management activities also include activities related to large woody debris, including retention (e.g., to benefit fish habitat or channel stability), modification or repositioning (e.g., to avoid flood risk, debris trapping, or erosion), or removal (e.g., due to flood risk or risks to facilities, or to facilitate fish passage). Activities related to large woody debris are discussed with respect to impacts on fish in the *Vegetation Management* sections below.

Impact Estimates

Valley Water has estimated the acreages of direct impacts of sediment removal, vegetation management, aquatic herbicide application, and bank stabilization on upland, riparian,

aquatic, and wetland communities as described under "Impact Assessment" above. These estimates are provided in Table 3.4-5 and Table 3.4-6. Table 3.4-5 provides the total estimated impact acreages for upland, riparian, aquatic, and wetland communities over the 2027-2036 Program Renewal term, while Table 3.4-6 provides the estimated impact acreages for sensitive natural communities within those areas (i.e., the impacts provided in Table 3.4-5 are included in the total impacts provided in Table 3.4-5). A 25 percent buffer has been added to permanent vegetation management impact estimates to account for the hazard tree Program Renewal, and a 10 percent buffer has been added to all other impact estimates, to ensure that these estimates are conservative and encompass all Program Renewal activities. Based on experience from SMP-1 and SMP-2, these estimates are likely higher than the impacts that will actually result from Program Renewal activities. The following assumptions apply to the estimates provided in Table 3.4-5:

- The v*egetated wetlands* category encompasses a variety of herbaceous wetland plant communities, including but not limited to emergent wetlands with tall-statured species such as cattail and bulrush as well as lower-stature species such as watercress (*Nasturtium officinale*) and smartweed. These areas would be mapped as the coastal and valley freshwater marsh or seasonal wetland land cover by the VHP within nontidal areas, and as tidal salt marsh or tidal brackish marsh within tidal areas.
- The *aquatic habitat* category refers to unvegetated areas below the ordinary high-water mark, regardless of whether they contain any above-ground water at the time work is performed. These areas would be mapped as riverine land cover by the VHP within nontidal areas, and as tidal or intertidal within tidal areas.
- The *herbaceous streambank* category refers to herbaceous species that primarily consists of non-woody, ruderal vegetation growing between the ordinary high-water mark and top of bank along a stream. These areas may be mapped as the California annual grassland by the VHP.
- The *woody riparian* category refers to woody vegetation in riparian areas, including VHP riparian forest and scrub land cover types such as willow riparian forest and scrub, central California sycamore alluvial woodland, and mixed riparian forest and woodland. Impacts to this vegetation associated with aquatic herbicide application are generally due to the treatment of small saplings, primarily small willow saplings.
- The *other (non-developed uplands)* category refers to upland land cover types located above the top of bank such as grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

The following assumptions apply to the estimates provided in both Table 3.4-5 and Table 3.4-6:

- Impacts from sediment removal, vegetation management (i.e., the removal of vegetation, including trees <6" dbh), and aquatic herbicide activities are typically temporary. This is reflected in Tables 3.4-5 and 3.4-6, where 100 percent of these activities are classified as temporary.
- The estimates in Tables 3.4-5 and 3.4-6 do not include ecologically beneficial actions (e.g., the removal of invasive vegetation, management of vegetation for fire resilience, restoration site maintenance, vegetation management for ecological

health, , and management of vegetation for fire resilience). Beneficial actions are described and assessed qualitatively in this section, rather than quantitatively.

- Management of animal conflicts, minor maintenance activities, and upland herbicide application are not explicitly listed in Tables 3.4-5 and 3.4-6 because impacts of these activities are limited in extent and are not tracked on an activity-specific basis by Valley Water. However, the conservative estimates in Table 3.4-5 (which were calculated by applying conservative buffers, as described above) are expected to encompass all impacts of these activities.
- In cases where the same geographic location is impacted multiple times, those impacts are counted multiple times rather than as a single impact. For example, if hand removal of vegetation occurs within the same 1 acre of wetland vegetation five times during the course of the Program Renewal, this impact is counted as 5 acres rather than as 1 acre.

Table 3.4-5. Estimated 2027-2036 Total[1] Impact Acreages for Upland, Riparian, Aquatic, and Wetland Communities[6]

	Sediment Removal[2] (acres)		Aquatic Herbicide Application[2] (acres)		Vegetation Management (<6" dbh)[2] (acres)		Tree Removal (>6" dbh) (acres)	Bank Repair (acres)		Mechanical Mowing (acres)	Hand Weed Abatement (acres)	
Community and Land Cover	**In PMA[5] Temporary**	**Outside PMA Temporary**	**In PMA Temporary**	**Outside PMA Temporary**	**In PMA Temporary**	**Outside PMA Temporary**	**Outside PMA Permanent**	**Outside PMA Temporary**	**Outside PMA Permanent**	**In/Outside PMA Temporary**	**In/Outside PMA Temporary**	**Total**
Vegetated Wetlands (Nontidal) (Coastal and Valley Freshwater Marsh and Seasonal Wetland)	18.5	7.4	321.1	4.8	52.4	16.2	0	1	<1	0	0	422.4
Vegetated Wetlands (Tidal) (Tidal Salt Marsh and Tidal Brackish Marsh)	1.5	0.6	15.9	0.2	2.6	0.8	0	<1	<1	0.0	0.0	21.6
Aquatic Habitat (Nontidal) (Riverine)	74.1	29.6	0	0	0	0	0	1	<1	0	0	105.7
Aquatic Habitat (Tidal) (Tidal and Intertidal)	5.9	2.4	0.0	0.0	0.0	0.0	0.0	<1	<1	0.0	0.0	8.3
Herbaceous Streambank (California Annual Grassland)	0	0	188	3	3	1	0	2	<1	3150	1540	4888
Woody Riparian (Riparian Forest and Scrub)	0	0	28	<1	43	13	4	1	<1	0	0	91
Other (Non-Developed Uplands)[4]	0	0	0	0	N/A	5	1	<1	<1	3830	1480	5318
Total	**100**	**40**	**553**	**9**	**101**	**36**	**5**	**6**	**2**	**6980**	**3020**	**10855**
Percentage In/Outside PMA	**71.4%**	**28.6%**	**98.4%**	**1.6%**	**71.1%**	**28.9%**	**N/A[3]**	**100%**	**100%**	**N/A[3]**	**N/A[3]**	

1 Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed in Table 3.4-5 are encompassed within the conservative estimates provided.

2 All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions not long after maintenance is complete.

3 No PMAs are established for tree removal, mechanical mowing, or hand weed abatement.

4 Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

5 PMA = Previously Mitigated Area.

6 All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

The percentage of maintenance activities that occur within or outside of a PMA varies by activity, as follows:

- For all Program Renewal activities (Table 3.4-5), the majority of projected sediment removal (71.4 percent), aquatic herbicide application (98.4 percent), and vegetation management (i.e., the management of vegetation <6" dbh) (71.1 percent) that will occur under the Program Renewal is located within existing PMA reaches for which in-perpetuity mitigation has previously been provided (Table 3.4-5). These proportions are consistent with SMP-2. Therefore, although all impacts are evaluated as part of this assessment, only a fraction of the estimated impacts in Tables 3.4-5 and 3.4-6 will be located outside of PMAs and necessitate mitigation.
- For sensitive natural communities (Table 3.4-6), 100 percent of impacts on 5 acres of oak woodlands would occur outside of PMAs, 50 percent of impacts on 10 acres of northern coastal salt marsh would occur outside of PMAs, 50 percent of impacts on 4 acres of seasonal wetlands would occur outside of PMAs, and 67 percent of impacts on 3 acres of sycamore alluvial woodland would occur outside of PMAs.
- There are no PMAs for bank repair or the removal of trees >6" dbh; therefore, impacts of those activities will necessitate mitigation.

Table 3.4-6. Estimated 2027–2036 Total[1] Impact Acreages for Sensitive Natural Communities[4]

	Sediment Removal[2] (acres)		Aquatic Herbicide Application[2] (acres)		Vegetation Management (<6" dbh)[2] (acres)		Tree Removal (>6" dbh) (acres)	Bank Repair (acres)		
Community and Land Cover	In PMA[3] Temporary	Outside PMA Temporary	In PMA Temporary	Outside PMA Temporary	In PMA Temporary	Outside PMA Temporary	Outside PMA Permanent	Outside PMA Temporary	Outside PMA Permanent	Total
Oak Woodlands	0	0	0	0	0	2	<1	<1	<1	5
Northern Coastal Salt Marsh	<1	<1	3	<1	1	<1	0	<1	<1	10
Seasonal Wetlands	0	0	<1	<1	<1	<1	0	0	0	4
Sycamore Alluvial Woodland	0	0	0	0	<1	<1	<1	0	0	3

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of maintenance activities not specifically listed are encompassed within the conservative estimates provided. Mechanical mowing and hand weed abatement do not occur in sensitive natural communities under the Program Renewal.

[2] All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] PMA = Permanently Mitigated Area.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

Valley Water applies pre-emergent and post-emergent herbicide treatments to control growth of weeds in places like maintenance roads, access ramps, paths, fence lines, and other facilities that must be kept clear of vegetation to maintain their function. These are generally locations with developed and maintained facilities where the application of herbicide to control growth of weeds does not result in a habitat type conversion. Valley Water estimates that upland herbicide application will occur within approximately 677 acres of the Program Renewal Area annually. All 677 acres will be treated with post-emergent (i.e., after plants emerge) for spot treatment of existing plants. In addition, approximately 588 acres of the 677 acres will also be treated with pre-emergent (i.e., before plants emerge) herbicide application to stop the emergence of plants. Therefore, these impacts are not included in the impact estimates for special-status species and their habitats under Impact BIO-1 below.

Impacts on Sensitive Natural Communities

This section describes the general impacts of each Program Renewal activity type on sensitive natural communities in the Program Renewal Area as defined under the "Sensitive Natural Communities, Vegetation Alliances, and Habitats" discussion above. Such communities include some areas/habitats that are considered jurisdictional waters of the U.S., waters of the state, or CDFW-jurisdictional habitats, such as seasonal wetlands, coastal and valley freshwater marsh, northern coastal salt marsh, and riparian habitats (including) central California sycamore alluvial woodlands, as well as non-jurisdictional communities such as oak woodlands and serpentine plant communities.

IMPACT TYPES

Program Renewal activities may affect sensitive natural communities through the direct or indirect disturbance of vegetation and the disturbance, modification, or destruction of habitat. The types of potential impacts that are considered in this evaluation, grouped by maintenance activity type, are described below.

Bank Stabilization

Bank stabilization activities (e.g., site preparation, recontouring and treatment installation, earth and soil compaction and grading, vegetation planting, and other restoration activities) may result in direct and indirect impacts on sensitive plant communities, as well as subsequent changes in hydrology that alter the extent of wetland and aquatic communities present at a work location. Vegetation may be lost as a result of mechanical or physical clearing of work and access areas, and damage to vegetation may occur as a result of crushing by equipment, trampling by personnel, and compaction of soil, which could result in damage to plant roots. Some bank stabilization activities would require temporary water diversions or dewatering. This activity would result in the temporary loss of aquatic and wetland communities and may result in increased turbidity within and downstream from the footprint of the activities caused by mobilization of fine sediments. In addition, because barren slopes are more susceptible to erosion from incident rainfall, the loss of wetland vegetation and non-instream vegetation along stream banks following bank stabilization activities may result in an increase in erosion and sedimentation. This in turn may lead to the filling in of pools and damage to wetland vegetation. Bank stabilization also may affect downstream areas by altering flow patterns.

Permanent loss of sensitive communities may occur where banks are repaired with hard materials (e.g., rock base or concrete) and not revegetated following stabilization. Any clearing of oak trees or riparian tree species in support of bank stabilization activities would result in the loss of key habitat features in sensitive communities. Mobilization of dust would affect plants in sensitive communities immediately adjacent to or downwind from areas of earth-moving or equipment/vehicle activity. Dust may coat vegetative and floral surfaces, interfering with normal gas exchange, photosynthesis, or pollination. The unintentional introduction of nonnative species and/or pathogens during bank stabilization activities can also harm these communities and reduce their extent and overall health. Such impacts may lead to the alteration of the communities' species composition, structure, and function.

Maintenance activities (including bank stabilization) often include on-site refueling of equipment. Minor fuel and oil spills may occur during refueling, with a risk of larger releases. Without rapid containment and clean up, these materials may enter streams where they would kill or impair the health of wetland plants.

Sediment Removal

Because sediment removal would be limited to the stream channel, direct disturbance to upland plant communities would occur primarily through the establishment of staging and access areas adjacent to work locations. The operation of equipment in non-instream areas during sediment removal activities also may result in impacts to sensitive upland plant communities, similar to those described for bank stabilization activities above.

As sediment is removed, so is any vegetation that is growing on it, including freshwater and tidal wetland vegetation. Removal of wetland vegetation may result in the loss of propagules for colonization of downstream areas. Additionally, similar to bank stabilization, some sediment removal activities would require temporary water diversions or dewatering. This activity would result in the temporary loss of aquatic and wetland communities and may result in increased turbidity caused by mobilization of fine sediments. Wetland vegetation also may be damaged by equipment accessing sediment removal sites.

Valley Water studies have found that wetland vegetation in some areas often quickly re-establishes following sediment removal. The *Instream Wetland Vegetation Regrowth Study* (Rankin and Hillman 2000) found 65 percent and 98 percent average regrowth within 1 and 2 years, respectively, after 1997 sediment removal at six non-tidal freshwater study sites. Average regrowth on two tidal study sites was less, at 21 percent and 29 percent after one and two years, respectively. The pattern of rapid re-establishment, with greater rates in non-tidal than in tidal areas, was supported by regrowth study results on four additional 1998 sediment removal sites. After one year, those sites supported more non-tidal wetland than was present before sediment removal and almost 70 percent of the tidal wetland that was present before sediment removal.

Vegetation Management

Vegetation management in upland areas would result in the direct removal of vegetation via hand tools, mechanized hand tools, mowing, tree removal, pruning or coppicing, grazing, and herbicide application. Such activities may impact sensitive upland plant communities as a result of mechanical, physical, or chemical (i.e., herbicide) removal of vegetation, which could result in the alteration of the communities' species composition, structure, and

function. In addition, the creation of temporary access routes and staging areas may result in direct impacts on sensitive upland plant communities caused by mechanical or physical removal of vegetation, crushing by equipment, trampling by personnel, compaction of soil, and alteration of hydrology through compaction or alteration of surface drainage patterns resulting from movement of heavy equipment or soil disturbance.

Instream vegetation management would result in the direct removal of vegetation, often including wetland vegetation, as well as the application of herbicides to targeted vegetation (i.e., herbaceous, invasive, emergent, or small woody vegetation <2 inches diameter at breast height [dbh]) within wetland areas. This work is most often performed to support flow conveyance, but may also consist of hazard tree removal, restoration site maintenance, invasive plant control, and/or maintenance to promote the overall ecological health of a stream. Vegetation removal could result in increased scour caused by the loosening of sediment deposits, not only as a result of the removal of vegetation but also from accelerated flows. In addition, as described for bank stabilization above, vegetation management would result in the temporary loss of aquatic and wetland communities and may result in increased turbidity caused by mobilization of fine sediments. Wetland vegetation also may be damaged by equipment accessing maintenance sites.

Vegetation management activities performed by Valley Water can also have beneficial effects on sensitive natural communities. These beneficial activities may include invasive plant management and vegetation management for ecological health. Some vegetation management activities may also be extremely limited in extent such that no substantive impacts due to habitat removal or type conversation occurs (i.e., activities may have a neutral impact).

Management of Animal Conflicts

Animal conflict management activities may impact sensitive upland plant communities as a result of the disturbance of the soil surface, collapsing and filling of burrows, installation of surface treatments to inhibit burrowing, and control of burrowing mammal populations that are a component of some sensitive upland communities, such as oak woodlands. Impacts may include direct removal or damage of vegetation; compaction of soil, which could result in damage to plant roots; trampling by personnel; alteration of hydrology through compaction or alteration of surface drainage patterns; and exposure to toxic chemicals (e.g., petroleum products). Installation of surface treatments to inhibit burrowing by mammals also may affect sensitive communities in the treated area, and control of populations of burrowing mammals may adversely affect the disturbance regimes of those communities. Vegetation management activities associated with the management of animal conflicts would have similar effects to those described under “Vegetation Management” above.

Discharge of sediments into the channel as a result of ground-disturbing activities on levee surfaces (e.g., filling or compacting of crevices/holes) may result in the filling of pools as well as adverse effects on wetland vegetation. Regrading and recompacting the levee surface, as well as the installation of surface barriers, may require the removal of vegetation or may limit new vegetation growth caused by soil compaction and loss of accessible surface growing space. Vegetation management activities would have similar effects to those described under *Vegetation Management* above.

EVALUATION OF IMPACTS

Impacts are evaluated in this analysis by comparing the quality of sensitive communities present in the Program Renewal Area under baseline conditions to anticipated conditions after implementation of the stream maintenance activities. For this evaluation, impacts on sensitive communities were assessed based on the potential for disturbance, degradation, and/or loss of these communities as a result of Program Renewal activities.

Impacts on Special-Status Plants

This impact assessment was developed using general life history and habitat requirements for special-status plants, and considers how each Program Renewal activity type may affect each of the special-status plants identified as potentially occurring in the Program Renewal Area, as well as additional CNPS-listed CRPR 1, 2, 3, or 4 species that may be discovered in the Program Renewal Area in the future.

IMPACT TYPES

Program Renewal activities may affect special-status plants through direct or indirect disturbance of individuals and populations as well as disturbance, modification, or destruction of suitable habitat. The types of potential impacts that are considered in this evaluation, grouped by maintenance activity type, are described as follows.

Bank Stabilization

Bank stabilization activities (e.g., site preparation, recontouring and treatment installation, earth and soil compaction and grading, vegetation planting, and other restoration activities) may result in direct and indirect impacts on special-status plants. Individual plants may be lost as a result of mechanical or physical clearing of work and access areas, crushing by equipment, trampling by personnel, and compaction of soil. These activities could result in death, altered growth, or reduced seed set through physically breaking, crushing, wilting, or uprooting plants. Permanent loss of special-status plants and their habitat would occur where banks are repaired with hard materials (e.g., rock base or concrete) and not revegetated following stabilization. Grading and the removal or redistribution of soil may remove seed of special-status plant species from the work area. Mobilization of dust would affect special-status plants located immediately adjacent to or downwind from areas of earth-moving or equipment/vehicle activity. Dust may coat vegetative and floral surfaces, interfering with normal gas exchange, photosynthesis, or pollination. The unintentional introduction of nonnative species and/or introduction or mobilization of pathogens such as *Phytophthora* during bank stabilization activities can also harm special-status plants, potentially leading to the spread of invasives and/or infection of adjacent occurrences of special-status plants outside the work area. Invasive plants could reduce habitat quality for special-status plants, or directly impact their health, in areas within and immediately outside impact areas. *Phytophthora* could impair the health of plants, spreading through root systems and resulting in the loss of individuals.

Furthermore, maintenance activities (including bank stabilization) often include the on-site refueling of equipment. Minor fuel and oil spills may occur during refueling, with a risk of larger releases. Without rapid containment and clean up, these materials may kill or impair the health of special-status plants.

Sediment Removal

As sediment is removed, so is any vegetation that is growing on it, including special-status plant species and their seeds. Individual plants may be lost as a result of mechanical or physical clearing of work and access areas, crushing by equipment, trampling by personnel, and compaction of soil. These activities could result in death, altered growth, or reduced seed set through physically breaking, crushing, wilting, or uprooting plants. The operation of equipment in non-instream areas during sediment removal activities may similarly damage to special-status plants. The unintentional introduction of nonnative species and/or introduction or mobilization of pathogens such as *Phytophthora* during sediment removal activities can also harm special-status plants, potentially leading to the spread of invasives and/or infection of adjacent occurrences of special-status plants outside the work area. Invasive plants could reduce habitat quality for special-status plants, or directly impact their health, in areas within and immediately outside impact areas. *Phytophthora* could impair the health of plants, spreading through root systems and resulting in the loss of individuals.

Furthermore, maintenance activities (including sediment removal) often include on-site refueling of equipment. Minor fuel and oil spills may occur during refueling, with a risk of larger releases. Without rapid containment and clean up, these materials may kill or impair the health of special-status plants.

Vegetation Management

Vegetation management activities result in the direct removal of vegetation, potentially including special-status plants, via hand tools, mechanized hand tools, mowing, tree removal, grazing, and herbicide application. Such activities may result in the direct damage and mortality of special-status plant individuals or populations as a result of mechanical or physical removal of vegetation, or off-target herbicide contact via drift. In addition, the creation of temporary access routes and staging areas may result in direct impacts on special-status plants due to mechanical or physical removal of vegetation, crushing by equipment, trampling by personnel, compaction of soil, and alteration of hydrology through compaction or alteration of surface drainage patterns resulting from movement of heavy equipment or soil disturbance. The unintentional introduction of nonnative species and/or introduction or mobilization of pathogens such as *Phytophthora* during vegetation management activities can also harm special-status plants, potentially leading to the spread of invasives and/or infection of adjacent occurrences of special-status plants outside the work area. Invasive plants could reduce habitat quality for special-status plants, or directly impact their health, in areas within and immediately outside impact areas. *Phytophthora* could impair the health of plants, spreading through root systems and resulting in the loss of individuals.

In addition, the creation of temporary access routes and staging areas may result in direct impacts on special-status plant species as a result of mechanical or physical removal of vegetation; trampling by personnel and equipment; compaction of soil caused by movement of heavy equipment or soil disturbance; removal of propagules for colonization of other areas; and exposure to toxic chemicals (e.g. petroleum products).

Vegetation management activities performed by Valley Water can also have beneficial effects on sensitive natural communities. These activities may include invasive plant management and vegetation management for ecological health.

Management of Animal Conflicts

Animal conflict management activities may impact special-status plants as a result of the disturbance of the soil surface, collapsing and filling of burrows, installation of surface treatments to inhibit burrowing, and control of burrowing mammal populations in areas where special-status plants are present. Impacts may include direct removal or damage of vegetation; compaction of soil, which could result in damage to plant roots; trampling by personnel; alteration of hydrology through compaction or alteration of surface drainage patterns; and exposure to toxic chemicals (e.g., petroleum products). Installation of surface treatments to inhibit burrowing by mammals also may affect special-status plants in the treated area, and control of populations of burrowing mammals may adversely affect the disturbance regimes of plant communities that support special-status plants. Vegetation management activities performed in support of animal conflict management would have similar effects to those described under "Vegetation Management" above.

Evaluation of Impacts

Impacts on special-status plants are assessed based on the potential for individuals or populations, and/or occupied habitat, to be disturbed, degraded, or lost as a result of Program Renewal activities. Impacts on special-status plants are evaluated by comparing the quantity and quality of habitat present in the Program Renewal Area under baseline conditions to anticipated conditions following implementation of Program Renewal activities, and by considering the potential for individual activities to affect known and potentially occurring populations of these species.

Impacts on Common and Special-Status Fish and Wildlife

The impact assessment for common and special-status fish and wildlife was developed using general life history and habitat requirements for each of the five vertebrate classes (i.e., fish, amphibians, reptiles, birds, and mammals) as well as for invertebrates. The analysis considers how each Program Renewal activity type may affect each of the special-status wildlife species identified as potentially occurring in the Program Renewal Area, as well as several common wildlife species for which Program Renewal impacts could be significant under CEQA.

Impact Types

Program Renewal activities may affect special-status animals through direct or indirect disturbance of individuals and populations as well as the disturbance, modification, or destruction of habitat. The types of potential impacts that are considered in this evaluation, grouped by maintenance activity type, are described as follows.

Bank Stabilization

Fish

The effects of bank stabilization on fish depend on the community supported in the reach where the activity occurs, the habitat present at the site, and the type of bank stabilization installed. Important habitat values for fish that may be affected by bank stabilization activities would include effects on riparian shrubs and trees, instream and overhanging escape cover, and sedimentation.

Effects of bank stabilization on fish would depend largely on the species' use of the affected reach, the existing (pre-stabilization) condition of the bank, and the stabilization methods that were employed. Replacement of a natural or "soft" bank, especially one supporting riparian vegetation, with "hard" substrate such as concrete or riprap that was not conducive to riparian revegetation growth would likely result in an adverse effect on habitat for fish, including steelhead. In contrast, replacement of a hardened bank with softer stabilization methods, especially those that enhance instream complexity, would result in a considerable net benefit to fish, by increasing habitat complexity and enhancing refugia, pool-riffle complexes, and available habitat. To minimize adverse environmental effects, Valley Water first considers "soft" approaches or biotechnical bank stabilization techniques where feasible and appropriate. Bank stabilization also could lead to degradation of habitat through the loss of undercut banks.

Riparian vegetation is important in determining the structure and function of instream habitat. For example, overhanging riparian vegetation provides shade that moderates stream temperatures. Additionally, terrestrial invertebrates that occur in riparian vegetation are an important food item for salmonids, entering stream channels as a result of being blown or washed off riparian vegetation (Rundio and Lindley 2008). Terrestrial invertebrates can constitute 50–85 percent of the prey biomass consumed by salmonids seasonally in forested streams (Baxter et al. 2005, Rundio and Lindley 2008). In addition, plant material that falls into streams is an important food source for aquatic insects, which in turn are fed on by fish (U.S. Department of Agriculture Forest Service 1979, Knight and Bottorff 1984, Rundio and Lindley 2008, Rossi et al. 2022).

The loss of overhanging riparian vegetation can result in greater sunlight penetration and subsequent warming of stream temperatures. Increased sunlight and temperatures can increase the production of algae and subsequently aquatic invertebrates (Rossi et al. 2022). Water temperature and food availability are critical factors for rearing juvenile salmonids. The reported preferred and tolerable water temperatures for juvenile steelhead can be highly variable, potentially associated with variable acclimation temperatures, local adaptation, and other site-specific conditions. For example, preferred water temperatures for fry and juvenile steelhead across geographic regions have been reported to range from about 45°F to 65°F (Adams et al. 1975, Myrick and Cech 2001, Rich 1987). When additional food is available, juvenile *O. mykiss* and steelhead can also increase feeding to meet increased metabolic demands imposed by above-optimal temperatures, and growth rates can be higher under warmer conditions (Wurtsbaugh and Davis 1977, Hayes et al. 2008). However, the upper incipient lethal temperature for juvenile rainbow trout is reported to be 75°F to 79°F (Sullivan et al. 2000, McCullough et al. 2001).

In addition to direct effects of temperature on steelhead metabolic rate, temperature can also influence steelhead indirectly by influencing ecological interactions (for example, competition and predation) and food availability. For example, in some watersheds, warm water temperatures support and provide a competitive advantage for aquatic invasive species such as largemouth bass (Rahel and Olden 2008). Aquatic invasive species have been documented to prey on juvenile steelhead and compete for habitat and food resources (Carey et al. 2011, Thompson et al. 2012).

Repeated removal of smaller trees would prevent them from growing into larger trees, and thus over the long term, Program Renewal activities could reduce the input of large woody debris into streams and reduce the development of extensive root systems that would provide additional instream complexity. Over the course of the Program Renewal (2027–2036), such impacts would be limited by the extent to which 10 years' growth could substantially change habitat conditions or the contribution that individual trees could make to fish habitat. However, vegetation management would reduce the number of trees that grew tall enough to provide such habitat complexity resources to streams. Such complexity would be important to fish by encouraging the development of riffle/pool complexes, which would be important to steelhead spawning and feeding, and would provide refugia from predators and high flow velocities. Thus, bank stabilization activities that resulted in the loss of riparian vegetation (e.g., grading to remove undercut banks and clearing of vegetation before the installation of bank armoring) may adversely affect fish as a result of increased water temperatures and reduced food availability. The grading and armoring of undercut banks and the removal of overhanging vegetation and associated roots protruding from eroding banks also may adversely affect fish habitat by reducing the availability of instream escape cover.

The presence of dams along most SMP-maintained streams likely has resulted in significant shifts in vegetation type and density over time along the stream reaches below the dams. Without flushing flows during winter storms, vegetation has encroached on the channel, reducing channel width and, in many areas, densely shading the channel. Studies have found that primary production in seasonally warm, unshaded streams are often higher than those in shaded, cool streams (Casagrande 2010). Greater primary production can lead to greater food availability for foraging fish, thus increasing growth rates (Rossi et al. 2022, Casagrande 2010). However, due to the lack of shading during the summer and fall months, stream temperatures in Program Renewal Area streams would likely increase to above optimal temperature for rearing salmonids and fish would be likely to migrate out of these areas in order to seek thermal refugia. Therefore, thinning of vegetation as a result of the Program Renewal's vegetation management component may result in temporary benefits to steelhead and other fish by increasing prey abundance, but would likely result in decreased terrestrial invertebrate inputs and result in areas with suboptimal stream temperatures during the summer and fall months.

The loss of riparian vegetation on channel banks following bank stabilization activities also may result in an increase in erosion and sedimentation. Stream bank erosion is a natural process that can be beneficial to fish by providing a source of the boulders, cobble, and gravel necessary for high-quality salmonid spawning, rearing, and overwintering habitat. However, when natural levels of erosion are exceeded, sedimentation may have adverse effects on salmonid habitat by filling in spaces between gravels and cobbles. This embedding of gravels can impede intragravel flow, which is important for delivering oxygen to incubating eggs; create an impenetrable barrier that prevents the emergence of fry from their gravel nest; and decrease the amount of available habitat for overwintering steelhead, which use interstitial spaces in cobble or boulder substrate during winter periods of inactivity to reduce their exposure to predation and as refuge from downstream displacement during high velocity flows (Stillwater Sciences 2006, Michel et al. 2013, Buxton et al. 2015, Jorgensen et al. 2021). In addition, increased erosion may disturb benthic

organisms, which could impact prey presence and abundance (Bellmore et al. 2019). Increases in turbidity and sediment input, especially fine sediments, also may cause stress to or mortality of fish because of displacement, interference with orientation, reduced foraging efficiency, physical abrasion, gill damage or clogging, inner organ changes, and metabolic changes (Michel et al. 2013, Bellmore et al. 2019). Minor spills of petrochemicals, hydraulic fluids, and solvents may occur during vehicle and equipment refueling or as a result of leaks, adversely affecting water quality and potentially killing or injuring fish. Similarly, contact by uncured concrete with water could release chemicals that could impair the health of fish.

In accordance with its BMPs, Valley Water would capture and relocate native fish before the initiation of bank stabilization activities that would require temporary water diversions or dewatering. Before and during dewatering, qualified biologists will capture fish and relocate them away from the work area to avoid direct mortality and minimize possible impacts during maintenance activities. During relocation operations, fish would be subject to harassment, pursuit, capture, injury, mortality, and related stresses associated with netting, electrofishing, temporary captivity, and release into the relocation site. In addition to direct injury and mortality, the effects of electrofishing may include occasional spinal injuries that reduce growth rates of injured fish (Dalby et al. 1996, Ainslie et al. 1998, Boughton et al. 2022). Electrofishing would follow standard NMFS and CDFW survey protocols, which would minimize injury and mortality during stunning, handling, and relocating fish. Fish that were not relocated and that remained within the work site may be subjected to degraded water quality, temporary blockage of migration, stranding in isolated pools, and mortality as a result of dewatering or diverting water for bank stabilization activities. Thus, while the benefits of relocation would far outweigh the complete loss of individuals that would occur if fish were not relocated before dewatering took place, relocation could still result in adverse effects.

Aquatic benthic macroinvertebrates within the dewatered work area may be killed or the population's abundance may be reduced after dewatering (Cushman 1985). However, effects to macroinvertebrates will be temporary and rapid recolonization in about one to two months is expected after rewatering (Cushman 1985, Thomas 1985, Harvey 1986). Effects on macroinvertebrate loss on fish are negligible because upstream sources would be available downstream of the dewatered areas because flows would be maintained during dewatering.

Soil and groundwater in the Guadalupe River watershed contain potentially hazardous levels of mercury contamination (see Section 3.8, "Hazards and Hazardous Materials"). Bank stabilization activities involving ground disturbance may expose the mercury and potentially release it into the environment. Mercury is a toxic constituent that bioaccumulates in the food chain of aquatic organisms and terrestrial wildlife. Effects of methylmercury exposure on fish can include oxidative damage, impacts to reproduction, altered feeding behavior, and impacts to gonadal development, depending on the level of exposure and the life stage of the fish that is exposed (Wu et al. 2018).

Bank stabilization activities, including those that require dewatering and those that do not, may result in increased turbidity within and downstream from the footprint

of the activities due to mobilization of fine sediments. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from maintenance vehicles or equipment may affect the health of fish within or downstream from the activity area, and fresh concrete may release harmful chemicals into the water if dewatering occurs before the concrete has cured.

Amphibians and Reptiles

Potential direct effects of bank stabilization activities on amphibians and reptiles include the injury or mortality of individuals as a result of worker foot traffic, equipment use, vehicular traffic, vegetation management, and earth-moving activities. Seasonal movements of these species may be temporarily affected during bank stabilization activities because of disturbance, and substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and nonnative predators that would be attracted to trash left at the work site and that would prey opportunistically on these species. Movement of construction personnel and equipment within the site, and between on-site and off-site areas, could also spread pathogens such as chytrid fungus and ranavirus, which can impair the health of amphibians. Amphibians and reptiles can be trapped in pits, trenches, or other depressions excavated during work activities, or could be impacted if they take refuge in construction materials that are subsequently moved. Dewatering activities may result in a temporary loss of habitat, blockage of movement, and stranding or death of amphibian eggs and larvae.

Fossorial (burrowing) wildlife species and species that use existing animal burrows as refugia (e.g., Pacific tree frogs, western toads, western fence lizards, California newts, ensatina [*Ensatina eschscholtzii*], California tiger salamanders, California red-legged frogs, western skinks, gopher snakes, and others) may be crushed in their burrows by the passage of heavy equipment or trapped and suffocated. Furthermore, loss of subterranean habitat (i.e., burrows) as a result of grading and bank armoring may result in the displacement of small mammals, as well as invertebrates that would serve as a food source for some species of amphibians and reptiles. Additionally, where "hard" bank stabilization methods are used, bank protection could result in the loss of foraging, refugial, and overwintering habitat by removing burrows from the work area.

Special-status amphibians and reptiles that are found during pre-construction surveys and relocated to suitable habitat outside of the work site may be subjected to physiological stress and be at greater risk of predation.

As discussed under *Fish* above, bank stabilization activities in the Guadalupe River watershed may expose soils contaminated with mercury. Effects of methylmercury exposure on wildlife, including amphibians and reptiles, can include mortality (death), reduced fertility, slower growth and development, and abnormal behavior that affects survival, depending on the level of exposure (Scheuhammer et al. 2007).

Birds

Increased human activity may also affect the behavior of birds, causing them to avoid work areas, and therefore exposing them to increased competition with other birds in the areas to which they have dispersed, and increased levels of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with Program Renewal activities in the vicinity of suitable habitat may also result in an increase in native and nonnative predators that would be attracted to trash left in work areas, as well as a reduction in the quality of breeding or foraging habitat caused by the introduction of nonnative vegetation or pathogens such as *Phytophthora*.

The nesting season for most birds breeding in the Program Renewal Area is typically from February 1 through August 31, though some species may begin nesting in January or may have nests that remain active into September. Because bank stabilization activities will occur outside of the rainy season, the work would largely overlap the avian breeding season. If birds are actively nesting in or close to work areas when maintenance activities occur, vegetation clearing, grading, and activity of equipment, vehicles, and personnel could result in the physical disturbance or destruction of active nests (including eggs and young) or disturb adults to the point of nest abandonment.

The Program Renewal Area provides potential nesting habitat for many common and special-status bird species. Clearing and grading may result in the temporary or permanent loss of nesting and/or foraging habitat. Much of that habitat would regenerate following the completion of construction and vegetative stabilization of bare soils by Valley Water and would then be available for use by nesting birds, but some long-term loss of habitat would occur. In addition, increased sedimentation or hazardous material spills from maintenance activities may result in the temporary or permanent degradation of water quality and, hence, habitat quality in marsh or aquatic habitats downstream from work sites, which could impact habitat used by aquatic and riparian bird species.

As discussed above, bank stabilization activities in the Guadalupe River watershed may expose soils contaminated with mercury. Birds fed inorganic mercury show a reduction in food intake and consequent poor growth, with other reported effects including increased enzyme production, decreased cardiovascular function, blood parameter changes, immune response, changes in kidney function and structure, and behavioral changes) (Boening 2000, Scheuhammer et al. 2007).

Mammals

During bank stabilization activities, smaller mammals may be crushed or injured by personnel or equipment. Further, species that seek safety in burrows (mice, skunks, squirrels, and others) could be killed or entombed in collapsed burrows. Larger, more mobile mammal species, such as deer, canids, and bobcats, and some smaller mammals would vacate the area, potentially exposing them to increased competition from conspecifics already occupying the area to which they are displaced as well as increased levels of predation due to unfamiliarity with the new area or lack of sufficient refugia.

Removal of trees containing cavities and crevices, as well as modification of rock outcrops with crevices, would reduce availability of roosting sites for bats, including potential maternity roost sites. When trees or rocks containing roosting colonies or individual bats are removed or modified, individual bats can also be physically injured, killed, or subjected to physiological stress resulting from being disturbed during torpor. Adult and volant juvenile bats roosting in trees, structures, or rocky areas that are removed or otherwise disturbed may flush from these areas before they can be injured or killed. However, bats flushed during the daytime can suffer increased predation, resulting in the loss of small numbers of individuals.

During construction, bank stabilization activities would also result in the short-term loss of foraging habitat, such as open grassland areas in which small mammals forage, as well as a temporary impact on foraging individuals through the alteration of foraging patterns (e.g., avoidance of work areas because of increased noise and activity levels during maintenance activities).

As discussed above, bank stabilization activities in the Guadalupe River watershed may expose soils contaminated with mercury. Effects of methylmercury exposure on wildlife can include mortality (death), reduced fertility, slower growth and development, and abnormal behavior that affect survival, depending on the level of exposure (Scheuhammer et al. 2007).

Invertebrates

Invertebrates occur along and adjacent to channels where bank stabilization activities will occur. In these areas, work activities can impact invertebrates by removing larval host plants; killing eggs, larvae, or pupae; causing mortality or injury due to crushing by personnel or equipment; and removing a variety of flowering plants that serve as adult nectar sources. For species such as moths and butterflies, clearing of vegetation could remove larval host plants and nectar sources, and dust mobilization by Program Renewal activities could adversely affect the health of such plants in areas adjacent to work areas. For species such as bees, work activities could destroy subterranean nests and their occupants; clear vegetation that serves as pollen and nectar sources; and affect pollen and nectar sources through dust mobilization or changes in drainage patterns. In addition, invertebrate species may be adversely affected by habitat conversion, which could result from the unintentional introduction of nonnative grasses and forbs to work sites.

Sediment Removal

Fish

Sediment removal activities (e.g., sediment removal, access road construction, and staging area construction) may result in the removal of instream emergent vegetation and riparian vegetation along the channel banks, resulting in impacts similar to those described for loss of riparian vegetation as a result of bank stabilization activities. The removal of instream vegetation and riparian habitat may adversely affect fish as a result of increased water temperatures and reduced food availability. Additionally, the loss of instream cover, such as rocks, vegetation, and large woody debris, may adversely affect fish as a result of increased predation

caused by a decrease in the availability of escape cover and the alteration of local hydraulics (e.g., increasing water velocity), which could reduce the frequency of riffle and pool habitat (Stillwater Sciences 2006), and the loss of refugia during high flows. Sediment removal also would result in the loss of substrate used by various fish for foraging or spawning, most notably the removal of spawning gravel for salmonids and Pacific lamprey.

As discussed under bank stabilization above, increased sedimentation may have adverse effects on salmonid and Pacific lamprey spawning and overwintering habitat by filling in interstitial spaces between gravels and cobbles. Increases in turbidity and sediment input may also cause stress to fish because of feeding difficulties or displacement. Furthermore, settling of silt disturbed by sediment removal activities and contouring and grading of the channel following sediment removal may degrade spawning or rearing habitat in or downstream of work sites.

As discussed for bank stabilization activities, Valley Water would capture and relocate native fish in accordance with its BMPs before the initiation of sediment removal activities that require temporary water diversions or dewatering throughout the Project Area. During relocation operations, native fish would be subject to harassment, pursuit, capture, mortality, and related stresses associated with netting and electrofishing. Furthermore, fish that were not relocated and that remained within the work site may be subjected to degraded water quality, temporary blockage of migration, stranding in isolated pools, and mortality as a result of sediment removal activities.

Other effects of sediment removal on fish would be similar to those described above for bank stabilization. These would include the potential for fish injury or mortality during relocation efforts and adverse effects of fuel or chemical spills and mercury mobilization.

However, the removal of sediment also may result in beneficial impacts on the ability of fish to move along streams, particularly for salmonids to migrate between estuarine areas and upstream spawning and rearing habitats by improving upstream and downstream passage conditions. Sediment removal from infrastructure that provides access to fish passage and fish ladders will create more desirable migration conditions, which will benefit fish migration and movement throughout the watershed.

Amphibians and Reptiles

Similar to the potential direct effects of bank stabilization activities described above, potential effects of sediment removal activities on amphibians and reptiles can include the injury or mortality of individuals as a result of worker foot traffic, equipment use, vehicular traffic, vegetation management, and earth moving activities. Seasonal movements of these species may be temporarily affected during bank stabilization activities because of disturbance, and substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Increases in human concentration and activity in the vicinity of suitable habitat may result in an

increase in native and nonnative predators that would be attracted to trash left at the work site and that would prey opportunistically on these species.

In addition, for amphibians, sediment removal activities could disturb boulders or cobbles that support egg masses; destroy egg masses directly; result in siltation of eggs or tadpoles; and expose adults, juveniles, larvae, and/or eggs to petrochemicals, hydraulic fluids, solvents, and/or methylmercury. Movement of construction personnel and equipment within the site, and between on-site and off-site areas, can also spread pathogens such as chytrid fungus and ranavirus, which can impair the health of amphibians. Dewatering activities may result in a temporary loss of habitat, blockage of movement, and stranding or death of amphibian eggs and larvae.

Special-status amphibians and reptiles that are found during pre-construction surveys and relocated to suitable habitat outside of the work site may be subjected to physiological stress and be at greater risk of predation, and dewatering activities may result in a temporary loss of habitat, blockage of movement, and stranding or death of frog eggs and tadpoles.

Birds

Similar to the potential effects of bank stabilization activities described above, potential impacts of sediment removal activities on birds include disturbance of birds within and adjacent to the work areas during maintenance activities, increases in native and nonnative predators due to trash left in work areas, and a reduction in quality of breeding or foraging habitat caused by the introduction of nonnative vegetation, pathogens such as *Phytophthora*, and/or an increased exposure to mercury. In addition, if birds are actively nesting in or close to work areas when sediment removal activities occur, vegetation clearing, grading, and activity of equipment, vehicles, and personnel could result in the physical disturbance or destruction of active nests (including eggs and young) or disturb adults to the point of nest abandonment.

The removal of instream vegetation associated with sediment removal activities would result in the temporary loss of habitats that serve as breeding and/or foraging habitat, both in sediment removal areas and in associated access and staging areas. In addition, increased sedimentation or hazardous material spills from maintenance activities may result in the temporary or permanent degradation of water quality and, hence, degradation in the quality of marsh or aquatic habitats downstream that may be used by aquatic and riparian-associated bird species.

Mammals

Similar to the potential direct effects of bank stabilization activities described above, potential impacts of sediment removal activities on mammals can include mortality or injury by personnel or equipment; exposure to increased competition from conspecifics as a result of displacement; exposure to increased levels of predation because of unfamiliarity with the new area, lack of sufficient refugia, or increased numbers of predators; exposure to increased levels of mercury; and/or the short-term loss of foraging habitat. These effects would occur primarily in non-instream

staging and access areas and would be limited to in-channel sediment removal areas, as most mammals in the Program Renewal Area are terrestrial.

Invertebrates

Impacts to invertebrates from sediment removal would be similar to those described above for bank stabilization activities, although impacts to common aquatic invertebrates would be greater because sediment removal activities will be focused within aquatic habitats along stream channels, while impacts on upland invertebrates and their habitat would be limited within associated access and staging areas.

Vegetation Management

Fish

Because fish spend their time in habitats within streams, and many of the projected maintenance activities would occur in upland areas on levee tops and upper banks (i.e., not in the water itself), the potential for direct effects on fish during many Program Renewal activities, including vegetation management on levees, is substantially lower than the potential for direct effects on this species during similar work in aquatic habitats.

As discussed under the "Bank Stabilization" and "Sediment Removal" sections above, removal of instream and riparian vegetation may adversely affect steelhead as a result of increased water temperatures, reduced food availability, reduced escape cover, and the alteration of local hydraulics. In addition, decaying vegetation left in the channel following vegetation management activities may cause deterioration of water quality due to the depletion of oxygen during decomposition.

Settling of silt disturbed by vegetation management activities may result in adverse effects as discussed under "Bank Stabilization" and "Sediment Removal" above, including potential impacts on salmonid and Pacific lamprey spawning and rearing habitat as well as reduced prey or displacement.

Vegetation management activities may include the application of aquatic herbicides and surfactants, which may result in toxicity to fish and aquatic invertebrates if exposed to the products. The USEPA has conducted ecological risk assessments to determine the potential risks of labeled uses of herbicides and surfactants as described further in USEPA's (2004) *Overview of the Ecological Risk Assessment Process in the Office of Pesticide Program Renewals*. The risks of the potential, proposed products for use in aquatic environments (glyphosate, imazapyr, imazomox, triclopyr-choline, ethyl oleate, and paraffinic oil) on fish are summarized below. The assessments are useful in evaluating potential effects of herbicide and surfactant use on fish species in general for the Program Renewal Area. Evaluated herbicides and surfactants proposed for use by Valley Water are as follows, with a summary of the effects determination based on toxicity literature.

- Glyphosate (Rodeo): This is a systemic herbicide that could reach surface water via run-off after use (i.e., not direct exposure to watercourse) and is highly

immobile in soils (Blake and Pallett 2018). For freshwater and estuarine fish, the herbicide is slightly toxic to practically non-toxic on an acute exposure basis (Blake and Pallett 2018). Given the low soil mobility, there is a low chance residue would be present in aquatic environments after use in the Program Renewal Area. Use of the aquatically approved formulation at labeled rates would result in minimal effects to fish.

- Imazapyr (Habitat): This is a systemic herbicide that could reach surface water via run-off after use (i.e., not direct exposure to watercourse) and is relatively mobile in soils (USEPA 2014). For freshwater and estuarine fish, the herbicide is practically non-toxic on an acute exposure basis (USEPA 2014). Given the high soil mobility, residue could be present in aquatic environments after use in the Program Renewal Area.
- Imazamox (Clearcast, IMOX): This is an herbicide that could reach surface water via run-off after use (i.e., not direct exposure to watercourse) and is mobile in many soils (USEPA 2008). For freshwater and estuarine fish, the herbicide is practically non-toxic on an acute exposure basis (USEPA 2008). Given the high soil mobility, residue could be present in aquatic environments after use in the Program Renewal Area.
- Triclopyr-choline (Vastlan): This is an herbicide that could reach surface water via run-off after use (i.e., not direct exposure to watercourse) and is highly mobile in soils (Dow AgroSciences 2016). For freshwater and estuarine fish, the herbicide is practically non-toxic on an acute exposure basis (Dow AgroSciences 2016). Given the high soil mobility, residue could be present in aquatic environments after use in the Program Renewal Area.
- Ethyl oleate (Competitor): This is a non-ionic surfactant that could reach surface water via run-off after use (i.e., not direct exposure to watercourse). It is toxic to aquatic life, including fish, with 'long lasting effects' if exposed to the product (Virgon 2020). Residue could be present in aquatic environments after use in the Program Renewal Area.
- Paraffinic oil (Agri-Dex): This is a non-ionic surfactant that could reach surface water via run-off after use (i.e., not direct exposure to watercourse). There is no ecotoxicity information for this product (Helena 2019). Residue could be present in aquatic environments after use in the Program Renewal Area.

The majority of the herbicides summarized above are Category III and IV herbicides, which are the least toxic and most used by Valley Water staff, with the exception of triclopyr-chlorine and paraffinic oil, which are Category II herbicides and may also be used where needed. As explained in Chapter 2, *Project Description*, Program Renewal activities will minimize impacts to fish and aquatic habitat from herbicide use by implementing measures such as only using herbicides when other methods of vegetation management are impracticable; spot spraying emergent vegetation; not applying the herbicides directly to the wetted channel; application of herbicides by QAC or QAL licensed applicators; and complying with local, state, and federal regulations such as the SWRCB General Permit # CAG990005 (which requires a state-approved Aquatic Pesticide Application Plan to be followed), the orders for threatened and endangered species as stipulated by the 2004 United States District Court for certain pesticides applied near salmon-supporting waters, the 2006 United States District Court order for pesticide application around certain California red-

legged frog habitats, and the 2010 United States District Court order regarding pesticides and eleven species found in the Greater San Francisco Bay Area. In addition, BMPs would be implemented to reduce the potential effects of herbicides, as further described in the Impacts sections below.

Herbicides are commonly mixed with surfactants to increase effectiveness. Valley Water would continue to use surfactants to enhance the performance of herbicides. Surfactants aid the ability of an herbicide to penetrate the surface of vegetation by increasing its ability to spread over vegetation, stick to foliage, and penetrate thick cuticles. For aquatic herbicides, the use of a surfactant is typically necessary to achieve reasonable levels of control. In instances where surfactants are absent from the mixture, the level of control is often reduced. A reduction in control results in the need for a greater return frequency, which translates to more herbicide being used in the system and more frequent disturbance to the site. Concentrations of surfactants to herbicides are generally very low but may increase the toxicity of the final mixture.

In general, aquatic species such as fish are more susceptible to adverse effects of toxicity from surfactants than terrestrial wildlife because of the potential for alteration of cell permeability, thus increasing the potential for absorption of chemicals through their thin, moist skin. Some surfactants, particularly those that are nonylphenol-based, have been documented to result in chemical-induced lethargy and unconsciousness in fish, which can result in an increased risk of predation, as well as estrogenic effects (Smith et al. 2004, U.S. Department of Agriculture Forest Service 2007). However, as described in the Chapter 2,"Project Description," Valley Water proposes to limit surfactant use to non-ionic products that are documented to have the least toxic effect to aquatic life (compared to anionic surfactants, Mustapha and Bawa-Allah 2020). Both of the potential surfactants are oil-based (Competitor is vegetable oil based while the primary ingredient in Agri-dex is a paraffin-based oil) and function by increasing the absorption of herbicides through plant tissues. They are especially useful in increasing the penetration of herbicides through the bark of woody brush or tree stems (Bakke 2007). A study on the toxicity of surfactants to juvenile rainbow trout concluded that Agri-dex was less toxic to rainbow trout than two other commonly used surfactants, R-11 and LI 700 (Smith et al. 2004), and the 2006 Supplemental Environmental Assessment of the National Oceanic and Atmospheric Administration (NOAA) *Fisheries Implementation Plan for the Community Based Restoration Program Renewal* (NOAA 2006) concluded that Agri-dex was among the surfactants least toxic to marine and aquatic organisms (it is unknown whether Competitor was assessed).

Use of these herbicides and surfactants according to current label directions; following local, state, and federal regulations; and within the context of the Program Renewal (i.e., per the "Project Description" and incorporating applicable BMPs) is not expected to result in direct adverse effects on fish. Nevertheless, herbicides and surfactants may affect fish indirectly as a result of reduction in the availability of food items (e.g., invertebrates) and in the suitability of habitat (e.g., reduction in abundance of aquatic and terrestrial plants).

During the course of the Program Renewal, new surfactants or improved chemistries may be proposed to improve the efficacy of the Program Renewal or improve

protection to biological resources. The proposal of any new materials would include toxicological data for review by stakeholders. This would provide a process for review and approval before inclusion in the Program Renewal.

Repeated removal of smaller trees will prevent them from growing into larger trees, and thus over the long term, SMP activities could reduce the input of large woody debris into streams and reduce the development of extensive root systems that provide additional instream complexity.

Vegetation management activities performed by Valley Water can also have beneficial effects on habitats for fish. These activities may include invasive plant management and vegetation management for ecological health. Some vegetation management activities may also be extremely limited in extent such that no substantive impacts due to habitat removal or type conversation occurs (i.e., activities may have a neutral impact). In contrast, adverse effects of vegetation removal on fish communities are more likely to occur along perennial streams, where aquatic vegetation provides in-stream cover and complexity for fish and riparian vegetation provides benefits such as shading and protection from erosion, compared to intermittent streams that are dry for much of the year.

Downed tree management, including the retention, removal, cutting, and/or repositioning of trees within the channel, will also be performed under the Program Renewal. Downed trees provide benefits to aquatic species, such as fish, by providing refugia, foraging habitat, and in-stream habitat complexity. In anadromous salmonid channels, Valley Water aims to retain downed trees or large woody debris (defined as downed trees greater than 12 inches in diameter) where possible to preserve the beneficial physical and biological processes associated with the natural recruitment of wood to waterways. Complete removal of large woody debris typically occurs in highly modified streams. Where large woody debris is left in-place or repositioned, it can have ecological benefits for aquatic species. Where large woody debris is cut or removed these ecological benefits would also be removed; however, such debris is only removed where it would have an adverse effect on the channel such as limiting channel capacity, altering flows, increasing the risk of erosion or flooding, or affecting the function of a fish ladder. Benefits of downed tree management activities include removing large woody debris to facilitate fish passage or maintain the function of existing fish ladders as well as reducing negative impacts to instream habitats from erosion.

Amphibians and Reptiles

Similar to the potential effects of bank stabilization activities described above, potential direct effects of vegetation management activities on amphibians and reptiles include the injury or mortality of individuals as a result of worker foot traffic, equipment use, vehicular traffic, and vegetation management. Seasonal movements of these species may be temporarily affected during vegetation management activities because of disturbance, and substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase

in native and nonnative predators that would be attracted to trash left at the work site and that would prey opportunistically on these species.

In addition, as described under sediment removal above for amphibians, vegetation management activities occurring in channels could disturb boulders or cobbles that support egg masses; destroy egg masses; result in siltation of eggs or tadpoles; expose adults, juveniles, larvae, and/or eggs to petrochemicals, hydraulic fluids, solvents, and/or methylmercury. Movement of construction personnel and equipment within the work area, and between on-site and off-site areas, can also spread pathogens such as chytrid fungus and ranavirus, which can impair the health of amphibians.

Special-status amphibians and reptiles that are found during pre-construction surveys and relocated to suitable habitat outside of the work site may be subjected to physiological stress and be at greater risk of predation, and dewatering activities may result in a temporary loss of habitat, blockage of movement, and stranding or death of eggs and larvae.

Vegetation management activities include the application of herbicides. Amphibians in particular could be impacted by herbicides due to the absorption of these chemicals through their thin, moist skin. The USEPA has conducted ecological risk assessments to determine the potential risks of labeled uses of several herbicides, including four proposed for use by Valley Water (glyphosate, imazapyr, and triclopyr), on the federally listed California red-legged frog. These assessments are useful in evaluating potential effects of herbicide use on other amphibian species in the Program Renewal Area. Evaluated herbicides proposed for use by Valley Water are as follows, with a summary of USEPA's effects determinations:

- Glyphosate (aquatic and upland applications): No direct effects would occur on aquatic-phase California red-legged frogs for any of the terrestrial or aquatic uses. Glyphosate can result in indirect adverse effects on both aquatic-phase and terrestrial-phase California red-legged frogs through reduction in available prey (aquatic and terrestrial invertebrates), as well as a reduction in habitat (aquatic and terrestrial plants) except where it is targeted to remove nonnative or invasive vegetation as a benefit to the species.
- Imazapyr (aquatic application only): No direct effects are anticipated. However, imazapyr is likely to affect adversely the California red-legged frog via indirect effects on habitat and/or primary productivity (i.e., ecosystem structure and function for both the aquatic plant community and riparian vegetation).
- Triclopyr (aquatic and upland applications): Triclopyr is likely to adversely affect the California red-legged frog via direct and indirect effects on both terrestrial and aquatic phases of this species.

As a result, the use of herbicides for vegetation management could result in direct and indirect adverse effects on amphibians, including the California red-legged frog and other species, as well as their habitats. As discussed in detail in Chapter 4 of the SMP Manual and under "Regulatory Setting" above, Valley Water will continue to use herbicides in compliance with the current applicable state and federal laws and in accordance with Program Renewal permits.

In addition, per Chapter 4 of the SMP Manual, the following requirements apply to herbicide use throughout the Program Renewal Area and will help protect special-status wildlife species from adverse effects of herbicide application:

- All herbicide use must be preceded by the appropriate biological surveys and clearances.
- Herbicide application can only occur within the Program Renewal-mapped distribution of the California red-legged frog and California tiger salamander when the creek or area is dry and no rain is forecast for the next 48 hours.

As noted for fish above, Valley Water proposes to use surfactants designed for aquatic applications as part of its herbicide Program Renewal. Surfactants aid the ability of an herbicide to penetrate the surface of vegetation by increasing its ability to spread over vegetation, stick to foliage, and penetrate thick cuticles. Most aquatic herbicides either require or highly recommend the use of a surfactant to achieve reasonable levels of control. In instances where surfactants are absent from the tank mix, the level of control often is reduced. A reduction in control would cause a greater return frequency, which would translate to more herbicide being used in the system and more frequent disturbance to the site.

In general, aquatic species (e.g., fish and amphibians) are more susceptible to adverse effects of herbicides compared to terrestrial species because of the potential for surfactants to alter cell permeability, thus increasing the potential for absorption of chemicals through their thin, moist skin. Some surfactants, particularly those that are nonylphenol-based, have been documented to result in chemical-induced lethargy and unconsciousness in fish, which can result in an increased risk of predation as well as have estrogenic effects (Smith et al. 2004, U.S. Department of Agriculture Forest Service 2007). However, Valley Water proposes to limit surfactant use to two products documented to have the least toxic effects on aquatic life: a vegetable-based oil (ethyl oleate) and a paraffin-based oil. Both surfactants function by increasing the absorption of herbicides through plant tissues, and they are especially useful in increasing the penetration of herbicides through the bark of woody brush or tree stems (Bakke 2007). A study on the toxicity of surfactants to juvenile rainbow trout concluded that the paraffin-based oil was less toxic to rainbow trout than two other commonly used surfactants, R-11 and LI 700 (Smith et al. 2004), and the 2006 Supplemental Environmental Assessment of National Oceanic and Atmospheric Administration Fisheries Implementation Plan for the Community Based Restoration Program Renewal (National Oceanic and Atmospheric Administration 2006) concluded that the paraffin-based oil was among the surfactants least toxic to marine and aquatic organisms (it is unknown whether ethyl oleate was assessed).

In addition, Valley Water would follow the herbicide use guidelines established in its quality and environmental management system documents, including Q751D02 (Control of Oversight of Pesticide Use) and WW75100 (Vegetation Control Work Instructions), and in Chapter 2, “Project Description”. These guidelines require that all herbicide use incorporate appropriate biological surveys and clearances prior to the start of work, and that all herbicide application has a pest control recommendation provided by a California-licensed pest control advisor. A

recommendation is provided after each site is surveyed and the most appropriate control methods for the site are determined.

Vegetation management activities performed by Valley Water, such as invasive plant management and vegetation management for ecological health, can also have beneficial effects on habitats for amphibians and reptiles. Some vegetation management activities may also be extremely limited in extent such that no substantive impacts due to habitat removal or type conversation occurs (i.e., activities may have a neutral impact). In contrast, adverse effects on the northwestern pond turtle, federally proposed as threatened, are expected to be greatest along perennial streams, where aquatic vegetation provides in-stream cover and riparian vegetation provides refugia, and less along intermittent streams that are dry for much of the year (though these turtles do occur along some intermittent streams).

Birds

Similar to the potential effects of bank stabilization and sediment removal activities described above, potential impacts of vegetation management activities on birds include disturbing individuals such that they move away from work areas, potentially exposing them to increased competition and levels of predation; an increase in native and nonnative predators that are attracted to trash in work areas; and a reduction in the quality of breeding or foraging habitat caused by the introduction of nonnative vegetation or pathogens such as *Phytophthora*. In addition, if birds are actively nesting in or close to work areas when maintenance activities occur, vegetation management could result in the physical disturbance or destruction of active nests (including eggs and young) or disturb adults to the point of nest abandonment.

During maintenance activities, some bird species will take advantage of increased availability of prey that are flushed out of the work area and into the open. Following the completion of maintenance activities, vegetation in the work area will be limited, and the loss of vegetation will reduce the amount of prey and cover available for birds. However, birds will gradually return to reoccupy the area as the vegetation re-establishes.

Most importantly, vegetation maintenance activities will result in a loss of nesting, foraging, and roosting habitat, particularly in the form of riparian and wetland vegetation. Riparian habitats in Santa Clara County support very high densities and diversity of birds (Rottenborn 1997). Vegetation management effects would be largely temporary in any specific area, although the repeated nature of these impacts would limit the regeneration of woody riparian vegetation. Bird diversity generally increases with increasing foliage height diversity, or stratification of the vegetation. As a result, inhibiting the development or maintenance of a multi-layered riparian forest through vegetation management is expected to reduce bird diversity. Furthermore, because the densities of native riparian birds tend to increase with increasing vegetation volume (Mills et al. 1991), vegetation management activities that reduce the volume of vegetation (i.e., how dense the vegetation is) can reduce bird abundance. As a result, vegetation management will adversely affect some aspects of the riparian bird community.

The loss of understory vegetation resulting from pruning, coppicing, and mowing would reduce habitat for understory birds and could reduce dispersal ability of bird species associated with dense vegetation, as such species may be reluctant to move through areas lacking suitably dense cover. Additional loss of vegetation (typically consisting of ruderal vegetation) along access roads, on terraces, in outboard areas, and on channel slopes adjacent to streams would reduce foraging opportunities and prey availability for riparian birds, as well as nesting habitat for certain riparian-associated species that will nest in these areas.

In locations where vegetation management is performed repeatedly with regular frequency, riparian habitats are maintained in an early successional stage with relatively low vegetation density and limited vertical structure, and correspondingly low bird abundance. However, for bird species that occur primarily in early successional habitats, vegetation management can help maintain such habitat over the long term. In contrast, for bird species associated with more mature forests, repeated management of younger vegetation that prevents it from becoming mature may result in the long-term decline in these species. Tree removal may also result in the loss of snags or live trees that otherwise would provide habitat for a variety of birds.

In locations where vegetation management is performed less frequently, or that are targeted for new, regular management, adverse effects on riparian bird communities would be relatively higher due to the greater density and structural diversity of vegetation that would be impacted by the activity, and the greater diversity and abundance of birds that use such vegetation.

Vegetation management activities performed by Valley Water, such as invasive plant management and vegetation management for ecological health, can also have beneficial effects on habitats for birds. Some vegetation management activities may also be extremely limited in extent such that no substantive impacts due to habitat removal or type conversation occurs (i.e., activities may have a neutral impact).

Mammals

Similar to the potential effects of bank stabilization activities described above, smaller mammals may be crushed or injured by personnel or equipment during vegetation management activities, and species that seek safety in burrows could be killed or entombed in collapsed burrows. Larger, more mobile mammal species would vacate the area, potentially exposing them to increased competition from conspecifics already occupying the area to which they were displaced and increased levels of predation due to unfamiliarity with the new area or lack of sufficient refugia. These effects would occur primarily in non-instream areas, as most mammals in the Program Renewal Area are terrestrial.

The removal of trees containing cavities and crevices would reduce availability of roosting sites for bats, including potential maternity roost sites. In addition, when trees containing roosting colonies or individual bats are removed or modified, individual bats can be physically injured, killed, or subjected to physiological stress resulting from being disturbed during torpor. Bats roosting in trees that are removed or otherwise disturbed may flush from these areas before they can be

injured or killed. Bats flushed during the daytime could suffer increased predation, resulting in the loss of small numbers of individuals.

As described above for birds, the removal of vegetation from the Program Renewal Area would remove habitat and cover for mammals, and the loss of understory vegetation resulting from pruning, coppicing, or mowing could reduce dispersal ability of species associated with dense vegetation. As such, mammals may be reluctant to move through areas without suitably dense cover. The repeated management of younger vegetation, which would prevent it from becoming mature, may result in the long-term decline in mature riparian forests, reducing use of these areas by mammal species that rely on larger, denser habitat areas and/or mature trees, such as larger mammals and roosting bats.

Following completion of maintenance activities, vegetation in much of the impacted area would regrow over time. However, in locations where vegetation management is performed repeatedly with regular frequency, riparian habitats are maintained in an early successional stage with relatively low vegetation density and limited vertical structure, and correspondingly low bird abundance. In locations where vegetation management is performed less frequently, or that are targeted for new, regular management, adverse effects on mammals that utilize riparian habitats would be relatively higher due to the greater density and structural diversity of vegetation that would be impacted by the activity, and the potential for these areas to support a greater diversity and abundance of mammal species.

Vegetation management activities performed by Valley Water, such as invasive plant management and vegetation management for ecological health, can also have beneficial effects on habitats for mammals. Some vegetation management activities may also be extremely limited in extent such that no substantive impacts due to habitat removal or type conversation occurs (i.e., activities may have a neutral impact.

Invertebrates

Similar to the potential effects of bank stabilization activities described above, potential impacts of vegetation management activities on invertebrates would include removing larval host plants; killing eggs, larvae, or pupae; causing mortality or injury due to crushing by personnel or equipment; and removing a variety of flowering plants that serve as adult nectar sources. For species such as moths and butterflies, clearing of vegetation could remove larval host plants and nectar sources, and dust mobilization by Program Renewal activities could adversely affect the health of such plants in areas adjacent to work areas. For species such as bees, work activities could destroy subterranean nests and their occupants, clear vegetation that serves as pollen and nectar sources, and affect pollen and nectar sources through dust mobilization or changes in drainage patterns. In addition, invertebrate species may be adversely affected by habitat conversion, which could result from the unintentional introduction of nonnative grasses and forbs to work sites.

Vegetation management activities performed by Valley Water, such as invasive plant management and vegetation management for ecological health, can also have

beneficial effects on habitats for invertebrates. Some vegetation management activities may also be extremely limited in extent such that no substantive impacts due to habitat removal or type conversation occurs (i.e., activities may have a neutral impact).

Management of Animal Conflicts

Fish

Surface application of erosion control blankets, pyramat, and chain link for the purpose of animal conflicts management may result in a loss of vegetation that was overhanging and shading the active channel. As discussed above, riparian vegetation plays an important role in determining the structure and function of fish habitat, and the loss of such vegetation could result in increased stream temperatures and a loss of escape cover for fish.

Discharge of sediments into the channel as a result of ground-disturbing activities on levee surfaces (e.g., filling or compacting of crevices/holes), or spills/leaks of fuels and other chemicals, may result in adverse effects as discussed under "Bank Stabilization" and "Sediment Removal" above, including potential impacts on salmonid spawning and rearing habitat as well as reducing prey or displacement. The use of certain fumigants, such as gas cartridges and aluminum phosphide, would be unlikely to result in adverse water quality effects, as it would be applied directly to rodent burrows and would be prevented from diffusing out of treated burrows.

Amphibians and Reptiles

Similar to the potential direct effects of bank stabilization activities described above, potential impacts on amphibians and reptiles resulting from the management of animal conflicts include the injury or mortality of individuals as a result of worker foot traffic, equipment use, vehicular traffic, vegetation management, and earth-moving activities. Seasonal movements of these species may be temporarily affected because of disturbance, and substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and nonnative predators that would be attracted to trash left at the work site and that would prey opportunistically on these species. Movement of personnel and equipment on the site, and between on-site and off-site areas, could also spread pathogens such as chytrid fungus and ranavirus, which can impair the health of amphibians. Amphibians and reptiles can also be impacted if they take refuge in construction materials that are subsequently moved.

Direct mortality of amphibians and reptiles that use existing animal burrows as refugia, as well as loss of subterranean habitat for those species, would occur due to filling and/or compacting of burrows, crevices, and other holes. In addition, control of small mammal populations would result in a reduction in the availability of refugia for amphibians and reptiles, and the displacement of invertebrates that provide food for these species. An indirect reduction in available subterranean

habitat for amphibians and reptiles would also result from surface application control methods aimed at preventing rodent activity.

Special-status amphibians and reptiles that are found during pre-construction surveys and relocated to suitable habitat outside of the work site may be subjected to physiological stress and be at greater risk of predation.

Birds

As discussed for other maintenance activities above, increased human activity may affect the behavior of birds, causing them to avoid work areas, and therefore exposing them to increased competition with other birds in the areas to which they have dispersed, as well as increased levels of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with Program Renewal activities in the vicinity of suitable habitat may also result in an increase in native and nonnative predators that would be attracted to trash left in work areas, as well as a reduction in the quality of breeding or foraging habitat caused by the introduction of nonnative vegetation or pathogens such as *Phytophthora*. In addition, if birds are actively nesting in or close to work areas when maintenance activities occur, vegetation clearing, grading, and activity of equipment, vehicles, and personnel could result in the physical disturbance or destruction of active nests (including eggs and young) or disturb adults to the point of nest abandonment.

In addition, surface compaction and/or the placement of physical barriers for the purpose of animal conflict management may affect the character of the vegetation within the target area and, thus, the composition of bird species that would use the treated location.

Small mammal control may reduce the availability of prey for birds that rely on small mammal populations as a food source, such as hawks, falcons, and owls.

The deterrence of birds that nest on structures such as bridges, culverts, or other Valley Water infrastructure via the installation of netting and/or removal of partially completed, inactive nests would reduce the availability of nesting habitat for these birds within work areas. In addition, the removal of partially completed nests could reduce nest productivity for the birds attempting to nest on a given site. However, once they are prevented from nesting at a particular location, birds are expected to seek out alternate locations for nesting. Because bridges, culverts, and other structures are widely available within and adjacent to Valley Water's work areas, birds that are deterred from nesting at these locations are expected to find similar readily available locations nearby that will support nesting by these species.

Mammals

Because burrowing mammals are the primary target of animal conflicts management, obvious direct impacts on target mammals would result from the poisoning and trapping of small mammals, particularly California ground squirrels and valley pocket gophers, and the removal of their burrows. Individuals could be crushed or entombed within their burrows, and some species that are displaced

(particularly ground squirrels, cottontails, and deer mice) would have to expend energy to find or dig new underground refuge sites. Carnivorous and omnivorous mammal species would lose some food resources with the loss of burrowing prey species.

Surface application of erosion control blankets, pyramat, and chain-link fencing for the purpose of animal conflicts management may result in direct and indirect impacts on mammal species. Blanket-like materials could trap small mammals underground and cause mortality or could act as cover for species such as the California vole, which may be attracted to food resources beneath the barrier but also would be protected from larger predators above the barrier. Chain-link barriers would have no impact on mammals small enough to access the surface through the open pattern; however, medium to large-sized mammals such as skunks, rabbits, and coyotes would lose refuge sites as burrowing by larger mammals is prevented in these areas.

Other impacts would be similar to the potential direct effects of bank stabilization activities described above, including mortality or injury by personnel or equipment; exposure to increased competition from conspecifics as a result of displacement; and exposure to increased levels of predation because of unfamiliarity with the new area, lack of sufficient refugia, or increased numbers of predators.

Invertebrates

Similar to the impacts on invertebrates described for bank stabilization activities above, management of animal conflicts could impact invertebrates by removing larval host plants; killing eggs, larvae, or pupae; causing mortality or injury due to crushing by personnel or equipment; and removing a variety of flowering plants that serve as adult nectar sources. For species such as moths and butterflies, clearing of vegetation could remove larval host plants and nectar sources. For species such as bees that inhabit burrows, the removal or filling of burrows could destroy subterranean nests and their occupants, and clearing of vegetation would reduce pollen and nectar sources. In addition, invertebrate species may be adversely affected by habitat conversion, which could result from the unintentional introduction of nonnative grasses and forbs to work sites.

EVALUATION OF IMPACTS

Impacts on common and special-status fish and wildlife species are assessed based on the potential for individuals or populations of animal species, or their habitat, to be disturbed, degraded, or lost as a result of Program Renewal activities. Impacts on animal populations and communities are evaluated by comparing the quantity and quality of habitat present in the Program Renewal Area under baseline conditions to anticipated conditions following implementation of Program Renewal activities, and by considering the potential for individual activities to affect known and potentially occurring populations of these species.

Impact BIO-1: 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 CDFW or USFWS (Less than Significant with Mitigation)

Impact BIO-1 describes the Program Renewal's impacts on common and special-status plant and animal species. The analysis is organized by species or groups of species and is based on the information in Tables 3.4-2 and 3.4-3. Species that are not listed in those tables as occurring in the Program Renewal Area are not analyzed below as they would not be impacted by Program Renewal activities.

Impact BIO-1A: Impacts on Serpentine-Associated Special-Status Plant Species (Less than Significant with Mitigation)

IMPACT ASSESSMENT

Serpentine plant communities in the Program Renewal Area support a unique assemblage of plant species, including the following serpentine-associated special-status species that are known to be present or could occur in the Program Renewal Area (see Figure 3.4-2 and Table 3.4-3):

- Tiburon paintbrush
- Coyote ceanothus
- Santa Clara Valley dudleya
- Metcalf Canyon jewel-flower
- Franciscan onion
- Big-scale balsamroot
- Pink creamsacs
- Mt. Hamilton thistle
- Fragrant fritillary
- Loma Prieta hoita
- Woolly-headed lessingia
- Smooth lessingia
- Woodland woollythreads
- Most beautiful jewel-flower

It is also possible that additional serpentine-associated special-status plant species listed as CRPR 1, 2, 3, or 4 by CNPS may be discovered in the Program Renewal Area in the future, and Program Renewal activities could impact those species as well.

Serpentine habitats are known to occur in the larger Program Renewal Area, but surveys by Valley Water have determined these habitats are absent from maintenance activity areas.

Valley Water's 2004 and 2008 surveys of serpentine communities along Program Renewal Area channels detected Mt. Hamilton thistle, smooth lessingia, and most beautiful jewel-flower along Valley Water canals (which are not included in the Program Renewal), but not within Program Renewal work areas. Although none of the remaining serpentine-associated species listed above were detected during the surveys, or are otherwise known to occur within or adjacent to Program Renewal work areas, known populations of these species are present elsewhere in the Program Renewal Area such as on serpentine soils on Coyote Ridge, on Tulare Hill, and in the Santa Teresa Hills (Figure 3.4-2). Since 2008, Valley Water has conducted surveys for special-status plants in Program Renewal work areas as appropriate, both for the SMP and for other Valley Water Program Renewals and projects, yet no serpentine-associated special-status plants have been recorded in areas where Program Renewal activities are expected to occur. Due to the intensity of Valley Water's survey efforts for serpentine communities and associated special-status plant species over the years, both at Valley Water facilities and in general, and because no high-quality serpentine communities have been identified in maintenance work areas, a previously unknown occurrence of these species is not expected to be located in an area where it could be affected by Program Renewal activities. Nevertheless, the possibility that any of the special-status plant species listed above, or additional serpentine-associated special-status plant species that may be detected in the Program Renewal Area in the future, may colonize serpentine habitat adjacent to Program Renewal work areas in the future cannot be eliminated. Thus, there is some possibility that Program Renewal activities may indirectly impact individuals of these species. Known occurrences of serpentine communities in the Program Renewal Area and adjacent to maintenance activity work areas where these species could occur are located along Upper Silver Creek, Coyote Creek, Calero Creek, and West Little Llagas Creek (Figure 3.4-2).

As described under "Impacts on Special-Status Plants" above, maintenance activities could result in a variety of impacts on serpentine-associated special-status plants, including indirect impacts on individuals and temporary and permanent impacts on suitable habitat. Conservation of the non-listed serpentine-associated special-status plant species listed above, which are all CRPR 1B or 3 species, as well as any additional non-listed CRPR 1, 2, 3, or 4 species that may be discovered in the Program Renewal Area in the future, is important because their populations contribute to preserving genetic resources and help ensure persistence of these rare species in the county and state. Due to the regional rarity of these species, Program Renewal impacts that contribute to the extirpation of a population could reduce the species' range or lead to the loss of important genetic diversity, which would be considered a substantial adverse effect and significant under CEQA. Impacts to a very small proportion of a population are not expected to cause the extirpation of that population, as the remaining plants would allow a viable population to persist. Guidelines to minimize impacts of seed collection on wild plant populations suggest that no more than 10 percent of the seeds from a plant population should be collected (Menges et al. 2004, Center for Plant Conservation 2024). Per the VHP, occurrences of annual plant species are assumed to retain long-term viability if the decline in population size and percent cover, relative to pre-activity conditions, is less than 25 percent five years after the activity is conducted; perennial plant occurrences are assumed to retain long-term viability if the decline is less than 25 percent three years after the activity (ICF International 2012). Conservatively, Valley Water has determined that Program Renewal impacts on more than 10 percent of a population (by individuals or occupied area) of non-listed CRPR 1, 2, 3, or 4 species would be considered significant under CEQA because such an impact could contribute to a reduction in these species' genetic resources, or could reduce numbers such that the population may no longer

have enough individuals to be self-sustaining. Impacts on 10 percent or less of a population would not be expected to cause the extirpation of such a population as long as the remaining plants are avoided and protected, as those remaining plants are likely to allow the population to persist and even expand.

Because Tiburon paintbrush, coyote ceanothus, Santa Clara Valley dudleya, Metcalf Canyon jewel-flower, and any other federally endangered species that may be detected in the Program Renewal Area in the future are extremely rare in the region, Valley Water has determined that Program Renewal activities resulting in impacts on any individuals of Tiburon paintbrush or more than 5 percent of a population (by individuals or occupied area) of other listed species would result in a substantial adverse effect on the species and would be considered significant under CEQA. Impacts on 5 percent or less of a population of listed species other than Tiburon paintbrush would not be expected to cause the extirpation of such a population as long as the remaining plants are avoided and protected, as those remaining plants are likely to allow the population to persist and even expand.

Additional indirect effects of Program Renewal activities on serpentine-associated special-status plants can occur due to nitrogen emitted by maintenance vehicles and equipment. Such nitrogen can fertilize serpentine soils and allow nonnative grasses and forbs that would not typically be able to colonize (at least robustly) serpentine habitats to become established and outcompete special-status serpentine plants. There is some potential for nitrogen emitted by maintenance vehicles and equipment to contribute to significant cumulative nitrogen deposition impacts on serpentine-associated special-status plants growing within or downwind of areas where the nitrogen is emitted. Due to the sensitivity of these species, the cumulative impacts of nitrogen deposition, to which this Program Renewal would contribute, would be significant under CEQA.

Applicable BMPs and VHP Conditions

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on serpentine-associated special-status plants due to maintenance activities occurring adjacent to serpentine habitats (as discussed above, no work will occur within serpentine habitats):

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work area, staging areas, and access routes is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** requires a qualified botanist to identify habitat for special-status plants, including serpentine habitats. Appropriate methods will be used to ensure that maintenance activities avoid all activities within serpentine habitats. In addition, any adjacent serpentine communities would be mapped and delineated in the field, and an appropriate buffer applied to minimize indirect impacts.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants. For activities adjacent to serpentine communities, equipment and tools will be cleaned and sanitized prior to arrival on the site, footwear will be cleaned and disinfected, work will be

scheduled to avoid rainy periods as feasible, and erosion control and revegetation materials will be clean with a low risk of *Phytophthora* contamination.

- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of special-status plants.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-36: Dust Management** requires implementation of measures to reduce dust within and adjacent to work areas, including watering exposed surfaces, covering haul trucks, sweeping streets, and limiting vehicle speeds.
- **BMP REVEG-1: Seeding** would ensure that exposed soils will be stabilized with native seed to prevent erosion.

Most importantly, Valley Water commits to implementing BMP GEN-8 and avoiding all direct and the majority of indirect (with the exception of nitrogen deposition, discussed below) impacts on serpentine communities and species.

VHP-covered Program Renewal activities would be required to comply with the following conditions to avoid and minimize impacts on VHP-covered serpentine-associated special-status plants (i.e., Tiburon paintbrush, coyote ceanothus, Santa Clara Valley dudleya, Metcalf Canyon jewel-flower, Mt. Hamilton thistle, fragrant fritillary, Loma Prieta hoita, smooth lessingia, and most beautiful jewel-flower), and serpentine habitat in the Program Renewal Area:

- **Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization** will help to avoid and minimize Program Renewal impacts on serpentine habitats and associated special-status plants.
- **Condition 19. Plant Salvage when Impacts Are Unavoidable** gives the Habitat Agency the option to salvage seed from VHP-covered special-status plants when impacts cannot be avoided.
- **Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences** requires pre-activity surveys for VHP-covered special-status plant species and revision of the activity design to avoid impacts, if feasible.

However, with the implementation of BMP GEN-8, which specifies avoidance of direct impacts on serpentine habitats (which do not geographically overlap maintenance activity areas), these conditions are not expected to apply to Program Renewal activities.

The VHP mitigates nitrogen deposition impacts via the payment of nitrogen deposition fees for new vehicle trips. Maintenance activities, such as those under the Program Renewal, are not subject to the payment of these fees; however, these fees are intended to fund all necessary nitrogen-related mitigation for impacts of all VHP-covered activities, including activities that are and are not subject to the payment of nitrogen deposition fees. Therefore, impacts of nitrogen emissions of VHP-covered Program Renewal activities are mitigated by the VHP even though the Program Renewal's nature does not necessitate payment of VHP nitrogen deposition fees.

VHP land cover fees and specialty fees for VHP-covered impacts on serpentine habitats in the Program Renewal Area are not anticipated, as no impacts within these areas would occur.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With the implementation of Program Renewal BMPs, the majority of impacts of VHP-covered Program Renewal activities on VHP-covered serpentine-associated special-status plants and their habitat are less than significant under CEQA. Compliance with serpentine-related VHP conditions and payment of VHP impact fees for serpentine land cover types are not anticipated to be needed, as no direct impacts within serpentine habitats would occur. However, due to the sensitivity of serpentine habitats and the rarity of serpentine-associated special-status plants in the region, to ensure that any residual impacts of Program Renewal activities on these species are reduced to less-than-significant levels, Valley Water will implement Mitigation Measure BIO-1, which specifies the payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for VHP-covered (and non-VHP-covered) activities to reduce effects of nitrogen deposition. With the implementation of this measure, VHP-covered Program Renewal impacts on serpentine-associated special-status plants are less than significant under CEQA.

> **Mitigation Measure BIO-1: Pay Santa Clara Valley Habitat Plan Nitrogen Deposition Fees**
>
> Valley Water will pay VHP Nitrogen Deposition fees for all Program Renewal Activities, regardless of VHP coverage, through the Habitat Agency's Voluntary Fee Payments Policy. The VHP will require the payment of fees in accordance with the number of daily vehicle trips generated by the Program. Valley Water estimates an average of 67 daily vehicle trips will be necessary to support the Program. This estimate is derived from consultation with management of all Valley Water units that currently implement SMP work to determine the estimated average number of daily vehicle trips associated with the Program Renewal work. Therefore, Valley Water will pay the nitrogen deposition fee associated with 67 daily vehicle trips.

Activities Not Covered under the VHP

Herbicide application, which is not covered under the VHP, would be avoided directly in serpentine areas per BMP GEN-8, and indirect impacts would be minimized by observing an appropriate non-disturbance buffer around serpentine areas. Thus, with the implementation of BMPs and compliance with applicable regulations, herbicides would not be applied in locations where serpentine-associated special-status plants are present, or in nearby areas using methods that could result in indirect impacts on these species, and impacts of herbicide application on serpentine-associated special-status plants would be less than significant under CEQA. No mitigation measures are necessary.

No maintenance activities within tidal portions of the Program Renewal Area will result in direct adverse effects on serpentine-associated special-status plants, as serpentine habitats do not occur within or near tidal reaches of the Program Renewal Area. For other non-VHP-

covered maintenance activities, Valley Water avoids conducting maintenance activities in serpentine areas, and indirect effects on these areas are effectively minimized through BMPs. Thus, with the implementation of BMPs, the majority of impacts of non-VHP-covered Program Renewal activities on serpentine-associated special-status plants would be less than significant under CEQA. However, due to the sensitivity of serpentine habitats and the rarity of serpentine-associated special-status plants in the region, to ensure that any residual impacts of nitrogen deposition from Program Renewal activities on these species are reduced to less-than-significant levels, Valley Water will implement Mitigation Measure BIO-1, which specifies the payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for non-VHP-covered (and VHP-covered) activities to reduce effects of nitrogen deposition.

SUMMARY AND CONCLUSION

Program Renewal activities could result in significant indirect impacts on serpentine-associated special-status plants due to the loss of substantial numbers of individuals (greater than 10 percent of a population of non-listed CRPR 1, 2, 3, or 4 species and greater than 5 percent of a population of state or federally listed species). However, for all Program Renewal activities (regardless of VHP coverage), BMPs will ensure that indirect impacts are effectively minimized. In addition, Valley Water will implement Mitigation Measure BIO-1, which specifies payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for all Program Renewal activities (regardless of VHP coverage) to reduce effects of nitrogen deposition.

For both VHP-covered and non-VHP-covered activities, with the implementation of Program Renewal BMPs and Mitigation Measure BIO-1, impacts on VHP-covered serpentine-associated special-status plants are less than significant under CEQA.

Impact BIO-1B: Impacts on Non-Serpentine-Associated Special-Status Plant Species (Less than Significant with Mitigation)

Non-serpentine-associated special-status plant species are discussed together because BMPs to protect these species are similar, and mitigation is required to reduce impacts of the Program Renewal on these species to less-than-significant levels under CEQA.

IMPACT ASSESSMENT

A number of special-status plants that are typically not associated with serpentine communities (or not strongly associated with these communities) and instead occur in communities such as valley and foothill grasslands, wetlands/seeps, and salt marshes are known to be present or could occur in the Program Renewal Area (see Figure 3.4-14 and Table 3.4-3), as follows:

- Anderson's manzanita
- Alkali milk-vetch
- Brittlescale
- Congdon's tarplant
- Santa Clara red ribbons
- San Francisco collinsia

- Point Reyes bird's beak
- Hospital Canyon larkspur
- Western leatherwood
- Small spikerush
- Hoover's button-celery
- Satan's goldenbush
- Arcuate bush-mallow
- Hall's bush-mallow
- Prostrate vernal pool navarretia
- Saline clover

It is also possible that additional non-serpentine-associated special-status plant species listed as CRPR 1, 2, 3, or 4 by CNPS may be discovered in the Program Renewal Area in the future, and Program Renewal activities could impact those species as well.

Of the special-status plant species listed above that are known to be present in the Program Renewal Area, Congdon's tarplant, Santa Clara red ribbons, San Francisco collinsia, western leatherwood, and Hall's bush-mallow are known from a number of locations in the Program Renewal Area and could occur within and adjacent to maintenance work areas. Anderson's manzanita, brittlescale, alkali milk-vetch, Point Reyes bird's beak, Hospital Canyon larkspur, small spikerush, Satan's goldenbush, Hoover's button-celery, arcuate bush-mallow, prostrate vernal pool navarretia, and saline clover are unlikely to occur in the Program Renewal Area and within maintenance activity work areas due to a lack of known records in the region or because the species' occurrences are localized in portions of the Program Renewal Area where maintenance activities will not occur. However, suitable habitat for these species is present in localized areas along Program Renewal channels, and the possibility that Program Renewal activities would impact individuals of these species cannot be ruled out.

As described under "Impacts on Special-Status Plants" above, maintenance activities can result in a variety of impacts on non-serpentine-associated special-status plants, including direct and indirect impacts on individuals and temporary and permanent impacts on suitable habitat. As discussed above, based on Valley Water surveys for special-status plants conducted for prior SMP activities and other purposes, special-status plants are not currently known to occur in Program Renewal work areas. Because the majority of the Program Renewal's impacts will occur within existing PMAs (for sediment removal, aquatic herbicide application, and vegetation management) where Program Renewal activities have been ongoing for many years, as well as within areas where maintenance occurs annually (for mechanical mowing and hand weed abatement), the potential for maintenance activities to result in the loss of occupied habitat for special-status plants is extremely low, and any such impacts would be very limited.

Conservation of non-listed special-status plant species (including those listed above and other CRPR 1, 2, 3, or 4 species that may be discovered in the Program Renewal Area in the future) is important because their populations contribute to preserving genetic resources and help ensure persistence of these rare species in the county and state. Due to the regional

rarity of these species, Program Renewal impacts that could lead to the extirpation of a population could reduce the species' range or lead to the loss of important genetic diversity, which would be considered a substantial adverse effect and therefore significant under CEQA. Impacts to a very small proportion of a population is not expected to cause the extirpation of that population, as the remaining plants would allow a viable population to persist. Guidelines to minimize impacts of seed collection on wild plant populations suggest that no more than 10 percent of the seeds from a plant population should be collected (Menges et al. 2004, Center for Plant Conservation 2024). Per the VHP, occurrences of annual plant species are assumed to retain long-term viability if the decline in population size and percent cover, relative to pre-activity conditions, is less than 25 percent five years after the activity is conducted; perennial plant occurrences are assumed to retain long-term viability if the decline is less than 25 percent three years after the activity (ICF International 2012). Conservatively, Valley Water has determined that Program Renewal impacts on more than 10 percent of a population (by individuals or occupied area) of non-listed CRPR 1, 2, 3, or 4 species would be considered significant under CEQA because such an impact would contribute to a reduction in these species' genetic resources, or could reduce numbers such that the population may no longer have enough individuals to be self-sustaining. Impacts to 10 percent or less of a population would not be expected to cause the extirpation of such a population as long as the remaining plants are avoided and protected, as those remaining plants are likely to allow the population to persist and even expand.

Because state and federally listed species are extremely rare in the region, Valley Water has determined that Program Renewal activities resulting in impacts on more than 5 percent of a population (by individuals or occupied area) would result in a substantial adverse effect on the species and would be considered significant under CEQA. Impacts on 5 percent or less of a population of listed species would not be expected to cause the extirpation of such a population as long as the remaining plants are avoided and protected, as those remaining plants are likely to allow the population to persist and even expand.

Applicable BMPs and VHP Conditions

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on non-serpentine-associated special-status plants:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** requires a qualified botanist to identify habitat for special-status plants. Appropriate methods will be used to ensure that maintenance activities avoid and minimize impacts on these species.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of special-status plants.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-36: Dust Management** requires implementation of measures to reduce dust within and adjacent to work areas, including watering exposed surfaces, covering haul trucks, sweeping streets, and limiting vehicle speeds.
- **BMP REVEG-1: Seeding** would ensure that exposed soils will be stabilized with native seed to prevent erosion.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions protect the non-serpentine-associated special-status plants that potentially occur within the Program Renewal Area, as none of these species are covered under the VHP or are listed as fully protected in California (such that VHP Condition 1 would apply). However, as discussed in the VHP and in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County, including many rare plant species, in addition to the species that are explicitly "covered species" under the VHP. In particular, the VHP's EIR analyzed potential impacts of VHP-covered future development as well as anticipated VHP conservation on Hall's bush-mallow, because that species had been considered for possible VHP coverage. The EIR stated that the reserve system would have a net benefit to Hall's bush-mallow due to the preservation of more than 400 acres of suitable habitat for the species – which were assumed to support the species – as well as enhancement of habitat conditions in the reserve system from planned management activities (USFWS et al. 2012). Based on the distribution of Hall's bush-mallow in Santa Clara County and the presence of known populations of this species within the reserve system (Calflora 2024), the reserve system is expected to benefit this species more than VHP-covered activities will impact the species. The Habitat Agency's management of occupied habitat will enhance that habitat for Hall's bush-mallow and ensure the long-term persistence of healthy populations of this species. Based on the known occurrence and abundance of this species in Habitat Agency reserves, the conservation benefits resulting from Valley Water's payment of VHP impact fees (i.e., management of habitat occupied by Hall's bush-mallow by the Habitat Agency) would offset any minor impacts of the Program Renewal on this species.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats in the Program Renewal Area. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at these habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. None of these non-serpentine-associated special-status plant species would then be covered by the VHP. However, based on the limited extent of anticipated Program Renewal impacts within suitable habitat for Hall's bush-mallow, as well as the known occurrence and abundance of this species in Habitat Agency reserves, the conservation benefits resulting from Valley Water's payment of VHP impact fees (i.e.,

management of habitat occupied by woodland woollythreads by the Habitat Agency) would offset any minor impacts of the Program Renewal on this species. Thus, with the implementation of BMPs and compliance with VHP conditions (including payment of VHP impact fees), impacts of VHP-covered Program Renewal activities on Hall's bush-mallow are less than significant, and no mitigation measures are necessary.

With the implementation of Program Renewal BMPs, impacts of VHP-covered Program Renewal activities on other non-serpentine-associated special-status plants would be avoided and minimized to the extent feasible. However, if complete avoidance is not feasible, impacts on these species could occur. The remaining non-serpentine-associated special-status plant species that could be impacted by Program Renewal activities (i.e., Anderson's manzanita, alkali milk-vetch, brittlescale, Congdon's tarplant, Santa Clara red ribbons, San Francisco collinsia, Point Reyes bird's beak, Hospital Canyon larkspur, western leatherwood, small spikerush, Hoover's button-celery, Satan's goldenbush, arcuate bush-mallow, prostrate vernal pool navarretia, saline clover, and other non-VHP-covered CNPS 1–4 species that may be detected in the Program Renewal Area in the future) may not be adequately conserved solely via VHP compliance because populations in VHP preserves are not known to be adequate to offset Program Renewal impacts. Although VHP preserves (including current reserves and future land acquisitions) could possibly support some of these species, that is less certain than is the case with Hall's bush-mallow, discussed above. Therefore, it cannot be assumed that compliance with the VHP would necessarily result in conservation of these species, including any species that are not currently known or expected to occur but that may be detected within the Program Renewal Area in the future, that is sufficient to offset the Program Renewal's impacts, and residual impacts would remain due to potential direct and indirect effects of VHP-covered activities on these special-status plant species that result in substantial (i.e., populations-level) impacts. If non-VHP-covered CRPR 1–4 special-status plant species for which VHP reserves do not adequately offset Program Renewal impacts by a proposed activity such that population-level impacts would occur, and (as discussed under "Impact Assessment" above) more than 5 percent of a population (by occupied area or individuals) of a listed species or more than 10 percent of a population (by occupied area or individuals) of a non-listed species will be impacted as determined by a qualified plant ecologist, such impacts would be significant under CEQA. With the implementation of Mitigation Measure BIO-2, VHP-covered Program Renewal impacts on non-serpentine-associated special-status plants would be less than significant under CEQA.

Mitigation Measure BIO-2. Create or Enhance and Preserve Mitigation Populations of Non-VHP-Covered Special-Status Plant Species

If avoidance of non-VHP-covered special-status plants is not feasible as determined by Valley Water biologists and other staff (e.g., planners, engineers, construction supervisors), and more than 5 percent of a population (by occupied area or individuals) of a listed species or more than 10 percent of a population (by occupied area or individuals) of non-listed CNPS 1–4 species that may be detected in the Program Renewal Area in the future (and for which the Habitat Agency's reserve system does not support sufficient populations to offset Program Renewal impacts) would be impacted, Valley Water will provide compensatory mitigation via the creation, enhancement, or preservation of occupied habitat for the impacted species. Creation of habitat and establishment of a new population would be provided at a minimum 1.5:1 (mitigation: impact) ratio; preservation and enhancement of an

existing population would be provided at a minimum 1:1 (mitigation: impact) ratio. If mitigation occurs through creation of a new population, seed from the population to be impacted may be harvested (or seed may be obtained from another source at an appropriate location, as determined by a qualified biologist) and used either to expand an existing population or to establish an entirely new population in suitable habitat.

A habitat mitigation and monitoring plan (HMMP) will be developed and implemented by Valley Water and implemented for the mitigation lands for a minimum of 10 years. That plan will include, at a minimum, the following information:

- a summary of impacts to the special-status plant species in question, including impacts to its habitat, and the proposed mitigation;
- a description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat, or other appropriate methods such as grazing, prescribed burns, planting native species, or mowing) the mitigation site for the species;
- a description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which will be determined by a qualified biologist, who will take into account factors such as genetics and the spread of pathogens, such as *Phytophthora*);
- proposed management activities to maintain high-quality habitat conditions for the species;
- a description of habitat and species monitoring measures on the mitigation site. At a minimum, performance criteria will include demonstration that any plant population fluctuations over the monitoring period of a minimum of 10 years do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (i.e., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management).
- contingency measures for mitigation elements that do not meet performance criteria.

Activities Not Covered under the VHP

With the implementation of Program Renewal BMPs, impacts of non-VHP-covered Program Renewal activities on non-serpentine-associated special-status plants would be avoided and minimized to the extent feasible. However, if complete avoidance is not feasible, impacts on these species could occur.

Herbicide application, which is not covered under the VHP, could affect non-serpentine-associated special-status plants in the Program Renewal Area. However, such herbicide use would only be performed with approval by a qualified biologist. In addition, per BMP GEN-8, prior to conducting herbicide use, individual special-status plants would be identified during pre-activity surveys and, if any individuals are found, the qualified biologist would recommend appropriate measures (e.g., maintaining a no-disturbance buffer or adjusting the timing of activities) to avoid and minimize effects on individuals. BMP GEN-8 also specifies that a qualified biologist will determine if a given type of vegetation management is ecologically appropriate, and alternative strategies will be considered based on the biologist's recommendations. With the implementation of these BMPs, direct and indirect impacts of herbicides on special-status plants would be minimized. Thus, with the implementation of BMPs, impacts of herbicide application on special-status plants would be less than significant under CEQA, and no mitigation measures are necessary.

As discussed for VHP-covered activities above, if Anderson's manzanita, alkali milk-vetch, brittlescale, Congdon's tarplant, Santa Clara red ribbons, San Francisco collinsia, Point Reyes bird's beak, Hospital Canyon larkspur, western leatherwood, small spikerush, Hoover's button-celery, Satan's goldenbush, Hall's bush-mallow, arcuate bush-mallow, prostrate vernal pool navarretia, saline clover, and any additional non-VHP-covered CRPR 1–4 species that may be detected in the Program Renewal Area in the future will be impacted by a proposed activity, and (as discussed under "Impact Assessment" above) more than 5 percent of a population (by individuals or occupied area) of a listed species or more than 10 percent of a population (by individuals or occupied area) of a non-listed species will be impacted as determined by a qualified plant ecologist, such impacts would be significant under CEQA. With the implementation of Mitigation Measure BIO-2, non-VHP-covered Program Renewal impacts on non-serpentine-associated special-status plants would be less than significant under CEQA.

SUMMARY AND CONCLUSION

Program Renewal activities can result in significant impacts on non-serpentine-associated special-status plants due to the loss of individuals. For all Program Renewal activities (regardless of VHP coverage), BMP GEN-8 will ensure that maintenance activities avoid and minimize impacts on special-status plants. Nevertheless, impacts on these species could occur. The loss of individuals or degradation of health of federally listed populations such that a population-level impact would occur would constitute substantial adverse effect on the species and would be considered significant under CEQA. Conservatively, Valley Water has determined that Program Renewal impacts on more than 5 percent of a population (by individuals or occupied area) of listed special-status plant species or 10 percent of a population (by individuals or occupied area) of non-listed special-status plant species would be considered significant under CEQA.

For VHP-covered activities, no VHP conditions protect the non-serpentine-associated special-status plants that potentially occur within the Program Renewal Area, as none of these species are covered under the VHP or are listed as fully protected in California (such that VHP Condition 1 would apply). Nevertheless, the payment of VHP land cover fees by Valley Water will benefit Hall's bush-mallow, and VHP-covered Program Renewal impacts on this species would be less than significant under CEQA. If CRPR 1–4 species for which VHP reserves do not adequately offset Program Renewal impacts by a proposed activity, and any individuals of a listed species or more than 10 percent of a population (by occupied area

or individuals) of a non-listed species will be impacted as determined by a qualified plant ecologist, Mitigation Measure BIO-2 will be implemented to reduce these impacts to less-than-significant levels under CEQA.

For non-VHP-covered activities, BMPs will avoid and minimize impacts of herbicide application on non-serpentine-associated special-status plants, and this impact is less than significant under CEQA. However, if CRPR 1–4 species will be impacted by a proposed activity, and more than 5 percent of a population (by occupied area or individuals) of a listed species (such that a population-level impact would occur) or more than 10 percent of a population (by occupied area or individuals) of a non-listed species will be impacted as determined by a qualified plant ecologist, Mitigation Measure BIO-2 will be implemented to reduce these impacts to less-than-significant levels under CEQA.

Impact BIO-1C: Impacts on the Monarch Butterfly, Crotch's Bumble Bee, and Large Marble Butterfly (Less than Significant)

The monarch butterfly, Crotch's bumble bee, and large marble butterfly are discussed together because Program Renewal impacts on these species are similar, and no mitigation measures are necessary to reduce impacts of the Program Renewal on these species to less-than-significant levels under CEQA.

IMPACT ASSESSMENT

The monarch butterfly forages on floral resources in open habitats throughout the Program Renewal Area, especially during spring and fall migration. This species is not known to form communal wintering roosts anywhere in Santa Clara County, and due to recent population declines it is expected to occur only in low numbers in any given area. Where milkweeds (*Asclepias* spp.) are present, individuals could breed in maintenance activity areas. However, focused surveys by Valley Water have identified limited numbers of milkweeds within Program Renewal work areas. These surveys have mapped concentrations of milkweeds along Flint Creek upstream of Mount Pleasant Road, along Norwood Creek upstream of Slopeview Drive, along Ruby Creek from Murillo Avenue to Klein Road, along Berryessa Creek upstream of Old Piedmont Road, along Randol Creek near Valley Quail Circle, and along the west branch of Llagas Creek from Spring Avenue to Ciolion Avenue. In addition, H. T. Harvey & Associates biologists noted patches of milkweed along Llagas Creek north of Highway 152 and along West Little Llagas Creek in between Llagas Road and Watsonville Road during 2023 surveys conducted as part of the Program Renewal's wetland delineation. Because milkweeds do not grow in heavily shaded areas, Program Renewal impacts on milkweeds (and any associated impacts on monarch butterflies and their habitat) are expected to occur outside of dense riparian habitats and areas dominated by woody shrubs along Program Renewal channels. However, milkweed can be concentrated along streams in the Program Renewal Area, including on gravel bars below top of bank. Thus, maintenance activities within the bed and banks of channels could affect this species in unshaded areas below top of bank.

Crotch's bumble bee similarly forages on floral resources in open habitats throughout the Program Renewal Area during its flight season (approximately February-March to August-September). This species nests in inactive small mammal burrows and crevices underground, and queens winter underground (Xerces Society for Invertebrate Conservation 2018). In the Program Renewal Area, the species is known from several locations along the edges of the San Francisco Bay, a few scattered locations in urban areas,

and from multiple locations in low foothills of the Diablo Range and Santa Cruz Mountains such as Santa Teresa County Park, Anderson Lake County Park, and Coyote Lake County Park (Bumble Bee Watch 2024, iNaturalist 2024). Channels in the Program Renewal Area may not support ideal habitat for Crotch's bumble bee due to the limited availability of foraging resources in some areas and high winter water tables, and habitats in maintenance activity areas are more likely to be used by this species where channels abut more natural areas that support extensive floral resources (e.g., along the edges of the San Francisco Bay and along inland open habitats and parks). Based on known locations of this species in the Program Renewal Area, there is no evidence that Crotch's bumble bee populations are concentrated along streams.

The large marble butterfly forages on floral resources in open habitats throughout the Program Renewal Area during its flight season from approximately mid-April until June or early July. Where mustards (family Brassicaceae) are present, individuals could breed in maintenance activity areas. In the Program Renewal Area, the species is known from several locations along the edges of the San Francisco Bay, the foothills of the Santa Cruz Mountains, and the foothills of the Diablo Range (Creekside Science 2024, iNaturalist 2024). Levee slopes with abundant mustards provide suitable habitat for the large marble butterfly, although habitats in maintenance activity areas are more likely to be used by this species where channels abut more natural areas that support extensive floral resources (e.g., along the edges of the San Francisco Bay and along inland open habitats and parks). However, based on known locations of this species in the Program Renewal Area, there is no evidence that large marble butterfly populations are concentrated along streams.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities can result in a variety of impacts on invertebrates such as the monarch butterfly, Crotch's bumble bee, and large marble butterfly including direct and indirect impacts on individuals and temporary and permanent impacts on suitable host plants and foraging habitat. Program Renewal activities can result in temporary direct impacts on individuals through the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during maintenance activities); however, these activities would not result in the loss of foraging adults, as such individuals would move away from any work areas or equipment before they could be injured or killed.

Maintenance activities would affect breeding and foraging habitat for monarch butterflies, Crotch's bumble bees, and large marble butterflies where suitable floral resources (for foraging), milkweed host plants (for breeding by monarch butterflies), mustards (for breeding large marble butterflies), and/or inactive burrows and crevices (for breeding by Crotch's bumble bees) are present within and adjacent to work areas. Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within riparian and upland habitats potentially supporting suitable habitat for these species. The maintenance activity with the greatest potential to affect habitat for these species is vegetation management, especially mowing, which can remove concentrations of flowering plants, mustards, and/or milkweeds. The introduction of nonnative vegetation would also affect habitat quality for these species, although all of these species make use of nonnative plants for nectaring. Maintenance of Program Renewal Areas by mowing can also benefit monarch butterflies, large marble butterflies, and Crotch's bumble bees by preventing overgrowth of woody vegetation. If mowing occurs in early spring, it can also stimulate the growth of herbaceous flowering plants, including milkweeds and mustards, within the mowing areas. In contrast, mowing that occurs later in the spring and summer when

herbaceous species, including milkweeds and mustards, are flowering, can remove these plants and adversely affect habitat for these species. In addition, mowing activities are primarily located in urban areas, where the risk of fire is a greater concern and Crotch's bumble bees and large marble butterflies are less likely to occur. Thus, the likelihood that mowing activities would affect populations of Crotch's bumble bees and large marble butterflies is relatively low, as these species are concentrated around the periphery of the Program Renewal Area and not along channels; however, there is a possibility that mowing would result in adverse effects on populations of monarch butterflies where milkweeds are present.

Because breeding and foraging habitats for the large marble butterfly and Crotch's bumble bee, as well as foraging habitats for the monarch butterfly, are extensively available in the Program Renewal Area vicinity; implementation of the Program Renewal is not expected to remove or degrade large areas of habitat such that regional populations of these species would be impacted; and Program Renewal activities would only impact a small proportion of habitats where these species occur, Program Renewal impacts on breeding and foraging habitats for the large marble butterfly and Crotch's bumble bee (including breeding host plants for the large marble), as well as foraging habitats for the monarch butterfly, are considered less than significant under CEQA. However, monarch butterfly impacts caused by vegetation management activities (especially mowing) that remove or degrade areas of milkweed habitat would be significant under CEQA due to the decreasing populations of monarch butterflies in the region as well as their reliance on milkweeds along Program Renewal Area streams for breeding.

Maintenance activities such as vegetation management (e.g., for mowing or site access) and grading activities (e.g., for bank stabilization) that result in the destruction of milkweeds or mustards supporting monarch eggs or larvae (on milkweeds) or large marble butterfly eggs or larvae (for mustards) would result in the loss of individual monarch butterflies or large marble butterflies. Herbicides used for vegetation management may also adversely affect monarch and/or large marble butterfly eggs or larvae present on milkweeds. Due to recent declines in populations of the monarch butterfly, as well as this species' concentration along Program Renewal Area channels, Program Renewal impacts due to the loss of individual eggs and larvae on milkweeds that result in substantial (i.e., population-level) impacts would be considered significant under CEQA. However, because large marble butterfly populations are concentrated along natural areas on the periphery of the Program Renewal Area, vegetation management activities within these areas would be limited, and the species utilizes common mustards for breeding (which are widespread in the Program Renewal Area), maintenance activities along channels, including mowing and other vegetation management activities, are not expected to result in significant effects on local populations.

Maintenance activities that result in the destruction of Crotch's bumble bee nests, which are typically located in inactive burrows or crevices underground, would result in the loss of individual Crotch's bumble bees. Crotch's bumble bees located in nests may be killed or injured due to trampling by construction personnel or equipment. In addition, clearing and grading for access roads and staging areas could result in the direct loss of individuals through the disturbance of areas that support burrows. Because Valley Water targets active small mammal burrows for destruction (as opposed to inactive burrows where bumble bees may nest), burrow destruction and filling is unlikely to result in the direct loss of individuals or active nests; however, the possibility that individuals or nests would be present in burrows that are filled/destroyed cannot be ruled out. Small mammal control would reduce

the availability of burrows for this species, potentially resulting in the long-term degradation of nesting and overwintering habitat for Crotch's bumble bees (to the extent that this species uses burrows in levees that would be managed by Valley Water). Herbicides used for vegetation management may also adversely affect Crotch's bumble bees. Because Crotch's bumble bee is a candidate for listing under CESA and is scarce in the region, Program Renewal impacts due to the loss of individuals in nests that results in a substantial (i.e., population-level) impact would be considered significant under CEQA.

APPLICABLE BMPS AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on monarch butterflies, Crotch's bumble bees, and their habitats:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-9: Protection of Monarch Butterflies** will ensure that milkweed within or near work areas is identified, appropriate vegetation management methods are used, and that either maintenance activities occur between September 1 and March 1 when monarch eggs and larvae are absent or a pre-activity survey is performed to ensure eggs and larvae are avoided.
- **BMP GEN-10: Protection of Crotch's Bumble Bees** requires non-VHP-covered Program Renewal activities to follow the procedures in the *Final Program Renewal Crotch's Bumble Bee Avoidance Plan* (Valley Water 2024b), which include staff training, pre-activity habitat assessments and surveys for Crotch's bumble bees prior to the start of work, biological monitoring if Crotch's bumble bee individuals or nests are detected, and avoidance of any active nests that are detected.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of the monarch butterfly, large marble butterfly, and Crotch's bumble bee.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-36: Dust Management** requires implementation of measures to reduce dust within and adjacent to work areas, including watering exposed surfaces, covering haul trucks, sweeping streets, and limiting vehicle speeds.
- **BMP REVEG-1: Seeding** would ensure that exposed soils will be stabilized with native seed to prevent erosion.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions currently protect the monarch butterfly, large marble butterfly, Crotch's bumble bee, or their habitat in the Program Renewal Area, as these

species are not currently covered under the VHP or are listed as fully protected in California (such that VHP Condition 1 would apply). However, all of these species are proposed for VHP coverage in the amendment currently being processed, so these species may be formally covered by the VHP once the amendment is approved. At that time, Valley Water would comply with any VHP conditions specific to these species. Once the Program Renewal is covered under the VHP, for Program Renewal activities covered by the VHP, any species-specific protections and survey requirements provided in the new VHP conditions will replace the protections outlined in BMPs GEN-9 and GEN-10 above, as applicable.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County; if and when these species are added to the VHP as covered species, the conservation Program Renewal is expected to include additional, species-specific measures to benefit these species.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With the implementation of Program Renewal BMPs and compliance with any applicable VHP conditions (should the monarch butterfly, large marble butterfly, and/or Crotch's bumble bee be covered under the VHP in the future), impacts of VHP-covered Program Renewal activities on individuals of these species and their habitats would be less than significant under CEQA, and no mitigation measures are necessary.

Valley Water would pay VHP impact fees for VHP-covered impacts on natural land cover types that provide breeding and foraging habitat for monarch butterflies, large marble butterflies, and Crotch's bumble bees in the Program Renewal Area; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats. The monarch butterfly, large marble butterfly, and Crotch's bumble bee will benefit from the VHP conservation Program Renewal (i.e., the preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which Valley Water would contribute via payment of VHP impact fees. As discussed in the VHP and in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County, including many common and rare animal species. The VHP's vast conservation Program Renewal would conserve lands that support populations of these two species due to its breadth, both geographically and in terms of the diversity of habitat types to be conserved. For example, narrow-leaved milkweed, the primary native larval host plant of the monarch butterfly, is common and widespread in the county, and it occurs on a variety of lands in the VHP's conservation areas. Similarly, Crotch's bumble bee is a generalist forager, using a vast array of flowering plants (Thorp et al. 1983), and the large marble butterfly is similarly a generalist forager. VHP conservation lands are expected to support Crotch's bumble bee and large marble butterfly populations, given the geographic spread of recent occurrences in the county, as well as high-quality habitat for these species. Thus, management of these lands by the VHP will enhance, sustain, and protect the value of this habitat to the monarch butterfly, large marble

butterfly, and Crotch's bumble bee. Therefore, with the payment of VHP fees and compliance with the VHP's conditions, Program Renewal impacts on these species from VHP-covered activities would be less than significant. No mitigation measures are necessary.

Activities Not Covered under the VHP

Impacts of the Program Renewal on individual large marble butterflies are less than significant under CEQA. With the implementation of Program Renewal BMPs, impacts of non-VHP-covered Program Renewal activities on individual monarch butterflies and Crotch's bumble bees would be effectively avoided and minimized, and these impacts are also less than significant under CEQA. Because breeding and foraging habitats for the large marble butterfly and Crotch's bumble bee, as well as foraging habitats for the monarch butterfly, are extensively available in the Program Renewal Area vicinity, and implementation of the Program Renewal is not expected to remove or degrade large areas of habitat such that regional populations of these species would be impacted, non-VHP-covered Program Renewal impacts on these habitats are considered less than significant under CEQA. With the implementation of BMPs to avoid patches of milkweeds in maintenance activity areas, Program Renewal impacts on breeding habitat for monarch butterflies would also be less than significant under CEQA. Thus, with the implementation of BMPs, no mitigation measures for Program Renewal impacts on the monarch butterfly, large marble butterfly, Crotch's bumblebee, and their habitats are necessary.

Herbicide application, which is not covered by the VHP, could affect monarch butterflies, large marble butterflies, and Crotch's bumble bees in the Program Renewal Area. However, such herbicide use would only be performed with approval by a qualified biologist. In addition, BMPs will ensure that herbicide application avoids milkweeds and nests of Crotch's bumble bees in the Program Renewal Area. Thus, with the implementation of BMPs, impacts of herbicide application on monarch butterflies, large marble butterflies, and Crotch's bumble bees would be less than significant under CEQA, and no mitigation measures are necessary.

SUMMARY AND CONCLUSION

Impacts of Program Renewal activities on the large marble butterfly and its habitats are less than significant under CEQA, and no mitigation measures are necessary.

Program Renewal activities could result in impacts on monarch butterflies and Crotch's bumble bees due to the loss of individuals. Because breeding and foraging habitats for the large marble butterfly and Crotch's bumble bee, as well as foraging habitats for the monarch butterfly, are extensively available in the Program Renewal Area, and implementation of the Program Renewal is not expected to remove or degrade large areas of habitat such that regional populations of these species would be impacted, Program Renewal impacts on these habitats are less than significant under CEQA. No mitigation measures are necessary.

For VHP-covered activities, no VHP conditions protect the monarch butterfly, large marble butterfly, or Crotch's bumble bee, as none of these species are covered under the VHP. Nevertheless, with the implementation of Program Renewal BMPs, compliance with applicable VHP conditions (should VHP conditions apply to these species in the future), and payment of VHP impact fees, impacts of VHP-covered Program Renewal impacts on the monarch butterfly, large marble butterfly, and Crotch's bumble bee are less than significant

under CEQA, and no mitigation measures are necessary. In addition, the payment of VHP land cover fees by Valley Water will benefit these species by contributing to the VHP's conservation Program Renewal.

For non-VHP-covered activities, with the implementation of Program Renewal BMPs, impacts on the monarch butterfly, large marble butterfly, and Crotch's bumble bee are less than significant under CEQA, and no mitigation measures are necessary.

Impact BIO-1D: Impacts on Steelhead (Less than Significant with Mitigation)

IMPACT ASSESSMENT

The federally listed CCC and SCCC steelhead rely on adequate instream flows, water temperatures, water depths, and velocities; appropriate spawning and rearing substrates (e.g., spawning gravels); and availability of instream cover and food for survival in the creeks of the Program Renewal Area (see Table 3.4-4). CCC and SCCC steelhead use riverine habitat for spawning, rearing, and migration and they may use estuarine habitats for migration. Within the Program Renewal Area, CCC steelhead are known to occur in, and suitable spawning habitat is present in, San Francisquito Creek, Los Trancos Creek, Stevens Creek, the Guadalupe River, Los Gatos Creek, Guadalupe Creek, Alamitos Creek, Calero Creek, Coyote Creek, Upper Penitencia Creek, and Arroyo Aguague (Leidy et al. 2005, NMFS 2005, Stanford University 2009, NMFS 2024) (Figure 3.4-15). SCCC steelhead are known to occur within the Program Renewal Area in the Pajaro River, Pescadero Creek, Tar Creek, Uvas/Carnadero Creek, Bodfish Creek, Little Arthur Creek, Llagas Creek, Pacheco Creek, Cedar Creek, and South Fork Pacheco Creek (Casagrande 2010, Smith 2007) (Figure 3.4-15). While Figure 3.4-15 indicates the geographic areas where maintenance activities are most likely to occur in steelhead habitat, activities could occur along steelhead streams throughout the Program Renewal Area.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities could result in a variety of impacts on special-status fish such as steelhead, including direct and indirect impacts on individuals and temporary and permanent impacts on suitable habitat. Because CCC and SCCC steelhead could spawn, rear, and migrate within Program Renewal Area streams, Program Renewal activities could affect the survival, reproduction, and/or growth of these species where they occur in the Program Renewal Area, depending on their use of the affected reach. For example, along reaches used solely for migration between spawning/rearing locations and San Francisco Bay or the Pacific Ocean, Program Renewal activities would be unlikely to have a substantial impact regardless of the maintenance activity. Conversely, maintenance activities that occur within spawning or rearing habitat, or upstream from such habitats, may have substantial effects on steelhead and their habitats. If maintenance activities are located near spawning or rearing habitats, steelhead fry and juveniles may be present in work areas when maintenance activities occur. As discussed under "Impacts on Common and Special-Status Fish and Wildlife" above, fish within the work area would be subject to injury and mortality and would be considered significant under CEQA. Furthermore, individuals present during in-water work activities may be subject to changes in stream temperature, water quality, and stranding related to channel dewatering causing an increased risk of mortality. Therefore, due to the potential for direct injury or mortality of federally listed steelhead within the Program Renewal Area during in-water maintenance activities such that a

substantial (i.e., population-level) impact would occur, Program Renewal impacts on the CCC and SCCC steelhead would be considered significant under CEQA.

The total estimated acreages of Program Renewal impacts along streams where steelhead potentially occur are provided in Table 3.4-7. Of these, impacts to vegetated wetlands along streams (120.7 acres of CCC steelhead habitat and 38.9 acres of SCCC steelhead habitat) and aquatic (riverine) habitat (20.6 acres of CCC steelhead habitat and 9.6 acres of SCCC steelhead habitat) would occur within steelhead habitat; impacts to herbaceous streambank vegetation (258.0 acres along CCC steelhead streams and 63.7 acres along SCCC steelhead streams) and woody riparian vegetation (24.8 acres along CCC steelhead streams and 7.8 acres along SCCC steelhead streams) would occur on stream banks within or directly upslope of steelhead habitat; and impacts to other (non-developed upland) habitat (237.1 acres along CCC steelhead streams and 54.9 acres along SCCCC streams) would occur outside of the stream channel. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Within the lower Guadalupe River in the Santa Clara Basin, 1,660 linear feet of the projected sediment removal work is located within specific sediment deposition reaches that are designed to capture sediment when flows exceed capacity of the main channel. These reaches run outside of, but parallel to, the main channel, and allow sediment removal activities to occur without impacting CCC steelhead that may be present within the Guadalupe River. The estimated impacts of sediment removal on habitat for CCC steelhead provided in Table 3.4-7 have been adjusted to account for these sediment deposition reaches.

Table 3.4-7. Estimated 2027-2036 Total[1] Program Renewal Impacts on Steelhead Habitat[5]

Community and Land Cover	Sediment Removal[2,3] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Central California Coast Steelhead							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh, Tidal Salt Marsh, and Tidal Brackish Marsh)	5.2	95.5	20.1	0.0	0.0	0.0	120.7
Aquatic Habitat (Riverine, Tidal, and Intertidal)	20.7	0.0	0.0	0.0	0.0	0.0	20.7
Herbaceous Streambank (California Annual Grassland)	0.0	53.3	1.1	0.0	156.1	47.4	258.0
Woody Riparian (Riparian Forest and Scrub)	0.0	8.1	15.6	1.1	0.0	0.0	24.8
Other (Non-Developed Uplands)[4]	0.0	0.0	1.4	0.3	189.9	45.6	237.1
Total	**25.8**	**156.9**	**38.2**	**1.4**	**346.0**	**93.0**	**661.3**
South Central California Coast Steelhead							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh)	2.4	30.1	6.3	0.0	0.0	0.0	38.9
Aquatic Habitat (Riverine, Tidal, and Intertidal)	9.6	0.0	0.0	0.0	0.0	0.0	9.6
Herbaceous Streambank (California Annual Grassland)	0.0	16.8	0.4	0.0	38.3	8.2	63.7
Woody Riparian (Riparian Forest and Scrub)	0.0	2.6	4.9	0.4	0.0	0.0	7.8
Other (Non-Developed Uplands)[4]	0.0	0.0	0.4	0.1	46.5	7.9	54.9
Total	**12.0**	**49.5**	**12.1**	**0.4**	**84.8**	**16.1**	**174.9**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided. As discussed under "Impact Assessment" above, although the biological resources subject to maintenance activities are often of lower quality in areas where recent maintenance has previously occurred, the discussion of the impacts that could result from Program Renewal activities is applied to biological resources in all impact areas, regardless of whether or not maintenance has recently occurred along a particular reach (i.e., the most conservative approach is assumed). Thus, the total impact areas for 2027-2036 are ten times the annual impact areas, regardless of whether impacts may occur within the same area multiple times.

[2] All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] The estimated impacts of sediment removal on habitat for CCC steelhead have been adjusted to account for the presence of sediment deposition reaches along the lower Guadalupe River.

[4] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[5] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

The primary impact to steelhead habitat resulting from sediment removal would be the removal of spawning gravel. Because 2027–2036 sediment removal activities would include impacts within some higher-elevation reaches where steelhead would be likely to spawn, such as in the Guadalupe River watershed, adverse effect of sediment removal on steelhead breeding habitat may occur because of the removal of gravel. Gravel removal would reduce the extent and availability of potential spawning habitat, and possibly rearing habitat, in the short term by removing existing spawning habitat and in the long term by reducing gravel supply within a creek. Due to the limited extent of available spawning gravel habitat for federally listed steelhead within the Program Renewal Area, this impact would be considered significant under CEQA.

Temporary impacts of sediment removal, aquatic herbicide application, vegetation management, and other maintenance activities within aquatic and vegetated wetland habitats used by steelhead in lower portions of watersheds (i.e., areas used for migration and rearing, but not for spawning) would also occur. Maintenance activities would reduce vegetative cover and available foraging resources for steelhead within these areas. Although the majority of steelhead habitat in these areas would be restored to existing conditions following the completion of the maintenance work, maintenance activities would result in the temporary loss of instream rearing and foraging habitat and instream complexity. Due to importance of instream rearing habitat and instream complexity for federally listed steelhead within the Program Renewal Area, this impact would be significant under CEQA.

If a work site is wetted and the area must be dry to perform the maintenance activity, Valley Water will relocate steelhead from the work area and install barriers to exclude fish from the area during in-water maintenance work. Before and during site dewatering, qualified biologists will capture fish and relocate them away from the work area to avoid direct mortality from maintenance activities.

Woody riparian vegetation that shades steelhead streams and would be altered by maintenance activities serves a number of important roles for steelhead, as discussed previously. Studies have found that primary production in seasonally warm, unshaded streams is often higher than primary production in shaded, cool streams (Casagrande 2010). Greater primary production can lead to greater instream food availability for foraging fish, thus increasing growth rates (Rossi et al. 2022, Casagrande 2010). However, per-project limits of no more than 20 percent overstory canopy removal in any reach are unlikely to cause substantial increases in stream temperatures. Rearing salmonids may migrate out of areas where vegetation management occurs to seek increased cover temporarily; however, such effects would be negligible.

Downed trees and large woody debris provide benefits to all life stages of CCC and SCCC steelhead by providing refugia, foraging habitat, and instream habitat complexity. A reduction in instream complexity resulting from large woody debris removal from downed tree management and other maintenance activities would reduce the amount of escape cover and refugia habitat for adult and juvenile CCC and SCCC steelhead. In contrast, benefits of downed tree management include removing large woody debris to facilitate fish passage or maintain the function of existing fish ladders, as well as improved instream habitat when large woody debris is retained. However, due to the sensitivity of these species, the net impacts due to the removal of large woody debris and associated instream complexity are expected to adversely affect CCC and SCCC steelhead, and be significant under CEQA.

Mitigation activities such as gravel augmentation (Mitigation Measure BIO-3) and installation of instream complexity (Mitigation Measure BIO-4) could also result in direct and indirect impacts to steelhead during installation; however, the net effect of these measures on these species would be beneficial.

The application of the herbicides and surfactants proposed for use in the Program Renewal (i.e., glyphosate, imazapyr, imazamox, triclopyr-choline, ethyl olate, and paraffinic oil) has the potential to result in direct impacts on steelhead survival, reproduction, and growth, as well as the indirect reduction of prey, as well as the temporary modification of in-stream vegetated wetlands and/or woody riparian habitat that shades steelhead streams. Due to the sensitivity of these species, impacts on individual steelhead and their habitat due to the application of herbicides and surfactants would be significant under CEQA. The Program Renewal Area contains designated critical habitat for both the CCC and SCCC steelhead (Figure 3.4-15). Stream maintenance activities would result in both negligible and adverse impacts on designated critical habitat, as described above for steelhead habitat in general. Specifically, Program Renewal activities could impact the physical and biological features (PBFs) of critical habitat involving freshwater spawning, rearing, and migration habitat for both populations, as well as estuarine habitats of the CCC steelhead. Impacts of the Program Renewal on designated critical habitat for CCC and SCCC steelhead due to the temporary or permanent loss of aquatic, riparian and/or wetland habitat supporting PBFs would be considered significant under CEQA in the absence of BMPs, VHP conditions, and VHP fees.

APPLICABLE BMPS AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on the CCC and SCCC steelhead and their habitats in the Program Renewal Area:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities in salmonid streams to ensure that those activities avoid and minimize times of year when salmonids are most likely to be present.
- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when salmonids are less likely to be present. In addition, herbicides will not be applied directly to water; and herbicide application will comply with the 2014 Salmonid Injunction.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized

dewatering. Streams that support steelhead will require a relocation effort and/or initial on-site monitoring by a qualified biologist, depending on seasonal conditions.

- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of salmonids.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas in tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be

managed to ensure that it does not cause water quality degradation in a live stream.

- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.
- **BMP BANK-2: Concrete Use near Waterways** provides measures to ensure that fresh concrete is isolated until it no longer poses a threat to water quality.

If maintenance activities are located near spawning or rearing habitats, steelhead fry and juveniles that may be present in work areas when maintenance activities occur can be subject to capture and relocation as specified in BMP GEN-18. As discussed under "Impacts on Common and Special-Status Fish and Wildlife" above, relocated fish would be subject to harassment, pursuit, capture, and the related stresses associated with netting, electrofishing, temporary captivity, and release into the relocation site. They may also be subject to injury and mortality, albeit rarely, when best practices are followed. Valley Water fish relocation activities for the SMP from 2002–2013 resulted in a steelhead mortality rate of only <1 percent, and SMP relocations from 2014-2023 resulted in no observed steelhead injury or mortality (Valley Water 2002–2004, 2006–2009, 2010-2013, Valley Water unpublished data). In addition, although some potential would exist for changes in temperature or water chemistry or predator densities between capture and release sites to result in stress, injury, or mortality of steelhead as well, the relocation sites would be carefully selected by experienced Valley Water fisheries biologists based on criteria to minimize these effects. Thus, with Valley Water's careful approach, the benefits of steelhead relocation (i.e., the avoidance of loss of up to all the individuals present in the work area) would far outweigh any limited adverse effects, and impacts of steelhead relocations performed in support of the Program Renewal would be less than significant under CEQA.

Per BMP GEN-2, instream herbicide application will take place between June 15 and October 15 (or until significant rainfall is forecasted or observed), when salmonids are less likely to be present. Valley Water will also use only herbicide formulations approved for aquatic environments and adhering to state and federal regulations concerning herbicide use. The use of these pesticides and surfactants according to existing label directions and the California Department of Pesticide Regulation PRESCRIBE database, which provides information consistent with USEPA's Interim Measures Bulletins for Protection of Endangered Species for user-selected sites and pesticides, would minimize direct adverse effects on steelhead. With the implementation of these measures, herbicides would not be applied using methods that could result in direct or indirect impacts on these species.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions explicitly focus on protection of the CCC and SCCC steelhead

within the Program Renewal Area, as these species are not covered under the VHP. These species are not expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the CCC and SCCC steelhead and their habitats by protecting water quality, preventing erosion, and minimizing habitat impacts. Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on aquatic habitats, and thereby on steelhead:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species, including the CCC and SCCC steelhead.
- **Condition 3. Maintain Hydrologic Conditions and Protect Water** Quality includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats for CCC and SCCC steelhead in the Program Renewal Area, including specialty fees per acre of impacts to riparian forest and scrub and coastal and valley freshwater marsh habitats as well as per linear foot of impacts to streams; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. No Program Renewal impacts on steelhead are covered under the VHP, and steelhead are not anticipated to be added as VHP-covered species in the future. Thus, compliance with VHP conditions will not include measures specifically designed to avoid and minimize impacts on steelhead as a result of the Program Renewal. However, for VHP-covered activities, compliance with habitat plan conditions and payment of land cover fees will reduce impacts on steelhead and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts), and mitigate for impacts to their habitats (i.e., by paying land cover fees). VHP impact fees paid by Valley Water for VHP-covered impacts on riparian, wetland, and stream habitats would contribute to the VHP's conservation Program Renewal, which includes riparian and wetland habitat restoration to offset impacts of VHP-covered activities. Thus, implementation of Valley Water BMPs and compliance with applicable VHP conditions would reduce impacts on riparian and wetland habitats within the VHP permit area. In addition, VHP-covered activities will comply with requirements of Conditions 3, 4, and 5 to further protect water quality and avoid and minimize impacts to streams.

With the implementation of BMPs, adherence to VHP conditions, and payment of VHP land cover fees and specialty fees, adverse impacts of VHP-covered Program Renewal activities on individual steelhead as well as on wetland and riparian habitats that support these species would be less than significant under CEQA, and no mitigation measures are necessary. However, residual adverse impacts would remain significant due to the removal of spawning gravels and/or instream habitat complexity features important to listed steelhead habitat. These impacts would be significant under CEQA, in the absence of mitigation measures, due to the sensitivity of these species and the high value these habitat components provide. Mitigation Measures BIO-3 and BIO-4 below would reduce these impacts to less than significant levels by augmenting high-quality spawning gravel, augmenting instream habitat complexity, or implementing other projects that provide substantial habitat benefit for salmonids. These may include fish passage projects or projects that provide refugia for salmonids. These measures would be implemented when spawning gravel and/or instream habitat complexity features important to listed steelhead habitat is removed by Program Renewal Activities, and as part of the large-scale salmonid habitat restoration projects discussed in Section 10.6.6 of the SMP Manual. These are projects that maximize benefit to steelhead based on the specific needs of fish populations and which therefore may or may not include a direct replacement of habitat features. Because different regulatory agencies have different mandates, specific details of how these restoration projects would provide mitigation for Program Renewal activities would be coordinated with individual agencies, particularly NMFS.

Mitigation Measure BIO-3: Augmentation of Spawning Gravel

Valley Water will implement gravel augmentation as mitigation for Program Renewal impacts to spawning habitat for CCC steelhead, SCCC steelhead, and Pacific lamprey. If more than 100 square feet of sediment removal is proposed along streams supporting these species, a Valley Water fisheries biologist will assess the sediment removal site for spawning and rearing habitat quality prior to the initiation of work. The biologist will determine the extent of sediment that is proposed for removal and that is considered to be “high-quality” spawning gravel, based on the following criteria:

- Less than 25-30 percent fines less than 6.35 mm (Kondolf 2000, Kondolf and Wolman 1993)
- Less than 12-14 percent fines less than 0.85 mm (Kondolf 2000)
- D50 (median particle size) of 12.5 to 22.0 mm, based on D50 of rainbow trout and steelhead from 30 to 65 centimeters (cm) length (Kondolf and Wolman 1993), corresponding to a range of 275 to 640 cm of steelhead adults recovered in streams of the San Francisco estuary (Leidy et al. 2005)
- Minimum patch size greater than 1.1 m2 (Trush 1991)

The habitat needs to be accessible under typical flows for when the appropriate life stages are present. Suitable depths and velocities must be available during flows typical of spawning season. Factors related to accessibility include depth and velocity criteria, which for spawning, are:

- Depth: 10–150 cm (Moyle 2002)
- Velocity: 20–155 cm/s (Moyle 2002)

If more than 100 square feet of high-quality gravel will be removed along streams supporting steelhead, and Pacific lamprey, Valley Water will provide compensatory mitigation via the installation of suitable spawning gravel along the affected creek at a 1:1 (mitigation:impact) ratio on a square footage or acreage basis or through other fisheries habitat projects as approved by appropriate resource agencies. Locations where sediment removal is performed at fish ladders will not require gravel augmentation, as these areas do not provide spawning habitat.

Mitigation Measure BIO-4: Augmentation of Instream Complexity

Valley Water will provide mitigation for the loss of instream complexity via the in-kind installation of structures that provide such complexity. Prior to sediment removal, bank stabilization, or large woody debris management, the affected area will be surveyed by a Valley Water fisheries biologist to identify any features that provide high-quality instream habitat complexity for salmonids. The biologist will determine that such features are of "high quality" based on a combination of the presence of one or more of the following criteria:

- Large woody debris providing cover and refugia from high flow velocities
- Deep pools providing rearing habitat and refugia from high flow velocities
- Cobble/boulder features providing cover, refugia from high flow velocities, and velocities suitable for good invertebrate drift

If such high-quality features must be removed from streams supporting salmonids during Program Renewal activities, Valley Water will provide compensatory mitigation by the installation of instream complexity features on a 1:1 (impact:mitigation) basis, on the basis of either the number of complexity features or the area that is affected hydrologically by the features that are removed; the fisheries biologist will determine which of these two metrics is appropriate based on the values to fish provided by the impacted features. Thus, one instream complexity feature will be installed for every one that is removed, or an instream complexity feature hydraulically affecting roughly the same area of the feature(s) removed will be installed. Impacts to instream complexity features may also be mitigated through other projects that benefit salmonids, such as passage improvement projects, when approved of by appropriate resource agencies.

As examples, enhancing instream complexity may involve:

- enlarging an existing large woody debris feature;
- anchoring a large woody debris feature;
- geomorphically shaping an instream bar or bed feature for improved habitat;

- enhancing a pool feature threatened by sedimentation; or
- enhancing streambed conditions to increase the range of flow velocity and habitat conditions.

Priority for these mitigation activities will be given to maintenance sites where instream features cannot be retained during construction because of conflicting objectives. For example, if a channel pool configuration cannot be retained during a bank protection job and the area is devoid of other complex pool features, then this area will be evaluated for the addition of an instream complexity feature.

In addition to enhancing existing features, new instream features may be developed to achieve several habitat objectives, including increasing pool habitat in homogenized stream reaches, providing escape cover for rearing and spawning fish, deepening feeding areas in riffle habitat, creating a variety of stream flow velocities for cover, sorting gravel, and providing resting areas for upstream migration. Additionally, improving instream function can benefit other aquatic flora and fauna by improving the overall stream complexity for which these species depend on for survival. If effective, such new instream complexity features (particularly in highly modified, urban streams) can augment or replace existing structural features required for successful reproduction and rearing of native fish and amphibians in the freshwater environment.

Newly developed instream habitat improvements may use log structures, boulder structures, or a combination of both log and boulder structures to achieve more complex habitats. Possible configurations of boulders or logs include weirs, clusters, single and opposing wing deflectors, spider logs, and digger logs. The construction materials selected for each instream complexity feature will depend on the target objective and site conditions.

The fisheries biologist, retained by Valley Water, will prepare specifications for the mitigation, including size, type, and configuration of the feature. The mitigation will be implemented prior to or within 1 year following the impact. The fisheries biologist will then inspect the completed complexity feature to assure that it meets the criteria for “high quality” instream complexity listed above.

Activities Not Covered under the VHP

With the implementation of BMPs, impacts of the Program Renewal on individual steelhead would be less than significant under CEQA, and no mitigation measures are necessary. However, residual adverse impacts would remain significant due to the loss of riparian and wetland habitats that support these species, as well as to the removal of spawning gravels and/or instream habitat complexity features important to their habitat. These impacts would be significant under CEQA, in the absence of mitigation measures, due to the sensitivity of these species and the high value these habitat components provide.

If salmonid habitat is removed due to maintenance activities, Valley Water will implement Mitigation Measure BIO-5 below to reduce residual impacts due to the loss of salmonid habitats to a less than significant level by replacing lost habitat functions and values through restoration, preservation, or enhancement of riparian and wetland habitats. Mitigation Measures BIO-3 and BIO-4 above would reduce more specific impacts due to the loss of

spawning gravel and instream complexity within those habitats to less than significant levels. Mitigation Measure BIO-3 will ensure that that any high-quality spawning gravel that is removed during sediment removal activities is augmented, and Mitigation Measure BIO-4 will ensure that any high-quality instream habitat complexity features that are removed are augmented following the work. All of these measures (BIO-3, BIO-4, and BIO-5) would be implemented by Valley Water as part of the large-scale salmonid habitat restoration projects discussed in Section 10.6.6 of the SMP Manual. Because different regulatory agencies have different mandates, specific details of how these restoration projects would provide mitigation for Program Renewal activities would be coordinated with individual agencies, particularly NMFS.

Herbicide application, which is not covered by the VHP, could affect CCC and SCCC steelhead in the Program Renewal Area. However, such herbicide use would only be performed with approval by a qualified biologist. In addition, with the implementation of BMP GEN-2, compliance with state and federal regulations regarding herbicide use, and adherence to label directions, impacts of herbicide application on CCC and SCCC steelhead would be less than significant under CEQA, and no mitigation measures are necessary.

Mitigation Measure BIO-5: Salmonid Habitat Restoration Projects

Valley Water will construct large-scale salmonid habitat restoration projects, involving either passage improvement; habitat feature development, such as large woody debris, gravel, and instream complexity; or other methods to improve stream function for salmonid habitat. These projects would be implemented to reduce residual impacts of non-VHP-covered activities due to the loss of salmonid habitat features to a less than significant level by replacing lost habitat functions and values through restoration, preservation, or enhancement. The Coyote 10B and Stevens Creek Evelyn Avenue Fish Passage mitigation projects are among the potential projects to be implemented to restore salmonid habitat, as follows:

- Coyote 10B is an abandoned gravel pond that could be enhanced to provide seasonal wetland and riparian habitat. The Coyote 10B site is located upstream of the Hwy 101/State Route 85 interchange on the east side of Valley Water's Coyote Dam. In 2005, the pond was measured at an average depth of approximately 8-10 feet and a maximum depth of 13 feet. The Coyote 10B site has the potential to provide approximately 7 acres of seasonal wetland, riparian habitat, and high-water refugia for fish as Program Renewal mitigation.
- The Stevens Creek Evelyn Avenue Fish Passage Project (Evelyn Project) was initially constructed in 2015. Valley Water is developing new designs for chutes, pools, and roughened channels, as well as design improvements to the channel profile, cross-section geometry, and engineered streambed material, for a reconstructed Evelyn Project. The goal of the new design approach is to provide a longer-term sustainable flow solution that supports fish migration in a creek zone that is highly dynamic and subject to geomorphic change during large flow events. An operations and maintenance guidance document for this project will be

prepared as part of the final design and planning process.

Because different regulatory agencies have different mandates, specific details of how salmonid habitat restoration projects would provide mitigation for Program Renewal activities would be coordinated with individual agencies, particularly NMFS.

Valley Water will conduct monitoring to document that the mitigation is operational and successfully providing the functions and values needed to offset Program Renewal impacts to fish, as described in detail under "Mitigation Feasibility Assessment, Monitoring, Reporting, and Success Criteria" above and in Appendix F.

SUMMARY AND CONCLUSION

Program Renewal activities can result in significant impacts on CCC and SCCC steelhead and their habitat within portions of the Program Renewal Area where these species occur (Figure 3.4-15). Valley Water will implement applicable Program Renewal BMPs to avoid and minimize impacts on individual steelhead and their habitat. With the implementation of these measures, Program Renewal impacts (regardless of VHP coverage) on individual steelhead are less than significant under CEQA, and no mitigation measures are necessary. Residual significant impacts would remain due to the loss of riparian and wetland habitats that support these species, as well as to the removal of spawning gravels and/or instream habitat complexity features important to their habitat.

For VHP-covered activities, compliance with habitat plan conditions and payment of land cover fees will reduce impacts on steelhead and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts), and mitigate for impacts to their habitats (i.e., by paying land cover fees). In addition, VHP-covered activities will comply with requirements of Conditions 3, 4, and 5 to further protect water quality and avoid and minimize impacts to streams. With the payment of VHP fees, Program Renewal impacts on riparian and wetland habitats would be less than significant under CEQA. Mitigation Measures BIO-3 and BIO-4 would reduce impacts related to the removal of spawning gravel and instream habitat complexity to less than significant levels by augmenting any high-quality spawning gravel that is removed during sediment removal activities and augmenting instream habitat complexity where high-quality features are removed. Thus, with payment of VHP fees and implementation of Mitigation Measures BIO-2 and BIO-3, impacts of VHP-covered impacts on steelhead are less than significant under CEQA.

For non-VHP-covered activities, Mitigation Measure BIO-5 would be implemented to reduce residual impacts due to the loss of riparian and wetland habitats to a less than significant level by replacing lost habitat functions and values through restoration, preservation, or enhancement. Mitigation Measures BIO-3 and BIO-4 would reduce impacts due to the loss of spawning gravel and instream complexity to less than significant levels by augmenting any high-quality spawning gravel that is removed during sediment removal activities and augmenting instream habitat complexity where high-quality features are removed.

Impact BIO-1E: Impacts on the Pacific Lamprey (Less than Significant with Mitigation)

IMPACT ASSESSMENT

The Pacific lamprey is a California species of special concern that occurs in a number of Valley Water-maintained creeks. The distribution of this species in the Program Renewal Area is not as well-known as that of steelhead, discussed above, but it is currently known to occur in the Guadalupe River, San Francisquito Creek, Coyote Creek, Upper Penitencia Creek, Lower Silver Creek, Guadalupe Creek, Alamitos Creek, Los Gatos Creek, Stevens Creek, and Uvas Creek (Table 3.4-4).

Impacts of the Program Renewal on individual Pacific lamprey are similar to those described for CCC and SCCC steelhead under Impact BIO-1D and are as described under "Impacts on Common and Special-Status Fish and Wildlife", above. In addition, electrofishing for fish relocation, stranding, herbicide and surfactant use, and increased turbidity may result in the direct injury or mortality of individual lamprey, particularly the larval stage of this species that burrows into fine sediment and filter feeds for several years. Due to the potential for direct injury or mortality, Program Renewal impacts that result in the loss of individuals of this species such that a substantial (i.e., population-level) impact occurs would be considered significant under CEQA.

The total estimated acreages of Program Renewal impacts along streams where Pacific lamprey potentially occur are provided in Table 3.4-8. Of these, impacts to vegetated wetlands (101.8 acres) and aquatic (riverine) habitat (20.6 acres) would occur directly within Pacific lamprey habitat, impacts to herbaceous streambank vegetation (258.5 acres) and woody riparian vegetation (20.8 acres) would occur on stream banks within or directly upslope of steelhead habitat, and impacts to other (non-developed upland) habitat (246.6 acres) would occur outside of the stream channel. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Within the lower Guadalupe River in the Santa Clara Basin, 1,660 linear feet of the projected sediment removal work is located within specific sediment deposition reaches that are designed to capture sediment when flows exceed capacity of the main channel. These reaches run outside of, but parallel to, the main channel, and allow sediment removal activities to occur without impacting Pacific lamprey that may be present within the Guadalupe River. The estimated impacts of sediment removal on habitat for Pacific lamprey provided in Table 3.4-8 have been adjusted to account for these sediment deposition reaches.

Table 3.4-8. Estimated 2027-2036 Total[1] Program Renewal Impacts on Pacific Lamprey Habitat[5]

Community and Land Cover	Sediment Removal[2,3] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Pacific Lamprey							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh, Tidal Salt Marsh, and Tidal Brackish Marsh)	5.2	79.9	16.8	0.0	0.0	0.0	101.8
Aquatic Habitat (Riverine, Tidal, and Intertidal)	20.6	0.0	0.0	0.0	0.0	0.0	20.6
Herbaceous Streambank (California Annual Grassland)	0.0	44.6	0.9	0.0	159.0	54.0	258.5
Woody Riparian (Riparian Forest and Scrub)	0.0	6.8	13.1	0.9	0.0	0.0	20.8
Other (Non-Developed Uplands) [4]	0.0	0.0	1.2	0.2	193.3	51.9	246.6
Total	**25.8**	**131.2**	**32.0**	**1.2**	**352.3**	**105.9**	**648.4**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided. As discussed under "Impact Assessment" above, although the biological resources subject to maintenance activities are often of lower quality in areas where recent maintenance has previously occurred, the discussion of the impacts that could result from Program Renewal activities is applied to biological resources in all impact areas, regardless of whether or not maintenance has recently occurred along a particular reach (i.e., the most conservative approach is assumed). Thus, the total impact areas for 2027-2036 are ten times the annual impact areas, regardless of whether impacts may occur within the same area multiple times.

[2] All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] The estimated impacts of sediment removal on habitat for Pacific lamprey have been adjusted to account for the presence of sediment deposition reaches along the lower Guadalupe River.

[4] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[5] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

As described for CCC and SCCC steelhead under Impact BIO-1D above, the primary impact to Pacific lamprey and their habitat would result from sediment removal. Similar to CCC and SCCC steelhead, Pacific lamprey require spawning gravel for spawning and finer substrates for larval rearing to complete their life cycle. Because 2027–2036 sediment removal activities include some higher-elevation reaches where Pacific lamprey would be likely to spawn, adverse effects of sediment removal on Pacific lamprey spawning and rearing habitat may occur because of sediment removal. Gravel removal would reduce the extent and availability of potential spawning habitat, and possibly rearing habitat, in the short term by removing existing spawning habitat and in the long term by reducing gravel supply within a creek. Due to the importance of spawning substrates within the Program Renewal Area, this impact would be considered significant under CEQA.

As described under "Impacts on Common and Special-Status Fish and Wildlife" and Impact BIO-1D above, maintenance activities may result in temporary and permanent adverse impacts to habitat used by Pacific lamprey through dewatering, increased turbidity/suspended sediment, changes in habitat structure, vegetation management, and other impact pathways. Although the majority of Pacific lamprey habitat in these areas would restore to existing conditions following the completion of the maintenance work, maintenance activities would result in the temporary or permanent loss of instream rearing and foraging habitat and instream complexity and are considered significant under CEQA. In contrast, downed tree management activities would benefit fish by contributing to instream complexity and/or ensuring that existing habitat is maintained when large woody debris is retained or modified.

Woody riparian vegetation that shades Program Renewal Area streams and would be altered by aquatic herbicide application, vegetation management, downed tree management, and other maintenance activities serves a number of important roles for Pacific lamprey, as discussed previously for CCC and SCCC steelhead. Additionally, instream woody debris provides important sources of cover for spawning and holding adult lamprey. Similar to the impacts to steelhead, per-project limits of no more than 20 percent overstory canopy removal in any reach are unlikely to cause substantial increases in stream temperatures; however, a reduction in instream wood would reduce the amount of instream cover for Pacific lamprey. Some benefits of downed tree management activities include removing large woody debris to facilitate fish passage or maintain the function of existing fish ladders and benefits to instream habitat when large woody debris is retained. However, the loss of instream habitat complexity if large woody debris is removed would have adverse effects on Pacific lamprey. As such, the net impacts of the Program Renewal on individuals of this species are expected to be adverse and significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on the Pacific lamprey:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities in salmonid streams to avoid and minimize times of year when adult special-status fish, including Pacific lamprey, are less likely to be present.
- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant

rainfall is forecasted or observed, when adult special-status fish, including Pacific lamprey, are less likely to be present, and provides additional measures to ensure that effects of instream herbicide application on special-status fish are minimized.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized dewatering. Streams that support a Pacific lamprey will require a relocation effort and/or initial on-site monitoring by a qualified biologist, depending on seasonal conditions.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of Pacific lamprey.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.

- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMPs GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas in tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.
- **BMP BANK-2: Concrete Use near Waterways** provides measures to ensure that fresh concrete is isolated until it no longer poses a threat to water quality.

If maintenance activities are located near spawning or rearing habitats, Pacific lamprey that may be present in work areas when maintenance activities occur can be subject to capture and relocation as specified in BMP GEN-18. As discussed under "Impacts on Common and Special-Status Fish and Wildlife" above, relocated fish would be subject to harassment, pursuit, capture, and the related stresses associated with netting, electrofishing, temporary captivity, and release into the relocation site. They may also be subject to injury and mortality, albeit rarely, when best practices are followed. As described for BIO-1D, Valley Water fish relocation activities for the SMP from 2002–2013 and from 2014-2023 resulted in little to no injury or mortality of steelhead, and similar injury and mortality rates would be expected to Pacific lamprey (Valley Water 2002–2004, 2006–2009, 2010-2013, Valley Water unpublished data). In addition, although some potential would exist for changes in temperature or water chemistry or predator densities between capture and release sites to result in stress, injury, or mortality of Pacific lamprey as well, the relocation sites would be carefully selected by experienced Valley Water fisheries biologists based on criteria to minimize these effects. Thus, with Valley Water's careful approach, the benefits of Pacific

lamprey relocation (i.e., the avoidance of loss of up to all the individuals present in the work area) would far outweigh any limited adverse effects, and impacts of Pacific lamprey relocations performed in support of the Program Renewal would be less than significant under CEQA.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on the protection of the Pacific lamprey within the Program Renewal Area, as this species is not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). This species is not expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the Pacific lamprey and its habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on aquatic habitats:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats for the Pacific lamprey in the Program Renewal Area, including specialty fees per acre of impacts to riparian forest and scrub and coastal and valley freshwater marsh habitats as well as per linear foot of impacts to streams; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. No Program Renewal impacts on Pacific lamprey are covered under the VHP, and this species is not anticipated to be added as VHP-covered species in the future. Thus, compliance with VHP conditions will not include measures specifically designed to avoid and minimize impacts on Pacific lamprey as a result of the Program Renewal. However, for VHP-covered activities, compliance with habitat plan conditions and payment of land cover fees will reduce impacts on Pacific lamprey and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts), and mitigate for impacts to their habitats (i.e., by paying land cover fees). VHP impact fees paid by Valley Water for VHP-covered impacts on riparian, wetland, and stream habitats would contribute to the VHP's conservation Program Renewal, which includes riparian and wetland habitat restoration to offset impacts of VHP-covered activities. Thus, implementation of Valley Water BMPs and compliance with applicable VHP conditions

would reduce impacts on riparian and wetland habitats within the VHP permit area to less than significant levels under CEQA. In addition, VHP-covered activities will comply with requirements of Conditions 3, 4, and 5 to further protect water quality and avoid and minimize impacts to streams.

With the implementation of BMPs, adherence to VHP conditions, and payment of VHP land cover fees and specialty fees, adverse impacts of the Program Renewal on individual Pacific lamprey as well as on wetland and riparian habitats that support this species would be less than significant under CEQA, and no mitigation measures are necessary. However, residual adverse impacts would remain significant due to the removal of spawning gravels and/or instream habitat complexity features important to this species' habitat. These impacts would be significant under CEQA, in the absence of mitigation measures, due to the sensitivity of this species and the high value these habitat components provide. Mitigation Measures BIO-3 and BIO-4 above would reduce these impacts to less than significant levels by augmenting high-quality spawning gravel that is removed during sediment removal activities and augmenting instream habitat complexity where high-quality features are removed. These measures would be implemented for impacts in the streams described in Tables 9-1 and 9-2 and as part of the large-scale salmonid habitat restoration projects discussed in Section 10.6.6 of the SMP Manual. Mitigation measures described for salmonids in the SMP Manual will be adequate compensatory mitigation for potential residual impacts to Pacific lamprey. Because different regulatory agencies have different mandates, specific details of how these restoration projects would provide mitigation for Program Renewal activities would be coordinated with individual agencies, particularly NMFS.

Activities Not Covered under the VHP

With the implementation of BMPs, impacts of the Program Renewal on individual Pacific lamprey would be less than significant under CEQA, and no mitigation measures are necessary. However, residual adverse impacts would remain significant due to the loss of riparian and wetland habitats that support this species, as well as to the removal of spawning gravels and/or instream habitat complexity features important to their habitat. These impacts would be significant under CEQA, in the absence of mitigation measures, due to the sensitivity of this species and the high value these habitat components provide.

If habitat for salmonids (which also provides habitat for Pacific lamprey) is removed due to maintenance activities, Valley Water will implement Mitigation Measure BIO-5 above to reduce residual impacts due to the loss of salmonid/lamprey habitats to a less than significant level by replacing lost habitat functions and values through restoration, preservation, or enhancement of riparian and wetland habitats. Mitigation Measures BIO-3 and BIO-4 above would reduce more specific impacts due to the loss of spawning gravel and instream complexity within those habitats to less than significant levels. Mitigation Measure BIO-3 will ensure that any high-quality spawning gravel that is removed during sediment removal activities is augmented, and Mitigation Measure BIO-4 will ensure that any high-quality instream habitat complexity features that are removed are augmented following the work. All of these measures (BIO-3, BIO-4, and BIO-5) would be implemented by Valley Water for impacts in streams in Tables 9-1 and 9-2 and as part of the large-scale salmonid habitat restoration projects discussed in Section 10.6.6 of the SMP Manual. Mitigation measures described for salmonids in the SMP Manual will be adequate compensatory mitigation for potential residual impacts to Pacific lamprey. Because different regulatory agencies have different mandates, specific details of how these restoration projects would

provide mitigation for Program Renewal activities would be coordinated with individual agencies, particularly NMFS.

Herbicide application, which is not covered by the VHP, could affect Pacific lamprey in the Program Renewal Area. However, as discussed for CCC and SCCC steelhead above, Valley Water will implement BMPs, including BMP GEN-2; use only herbicide formulations approved for aquatic environments; and adhere to state and federal regulations concerning herbicide use to minimize the effects of herbicides on aquatic species and their habitats. With the implementation of these measures, herbicides would not be applied using methods that could result in direct or indirect impacts on Pacific lamprey. Thus, with the implementation of BMPs, impacts of herbicide application on Pacific lamprey would be less than significant under CEQA, and no mitigation measures are necessary.

SUMMARY AND CONCLUSION

Program Renewal activities can result in significant impacts on Pacific lamprey and their habitat within portions of the Program Renewal Area where these species occur. Valley Water will implement applicable Program Renewal BMPs to avoid and minimize impacts on individual Pacific lamprey and their habitat. With the implementation of these measures, Program Renewal impacts (regardless of VHP coverage) on individual Pacific lamprey are less than significant under CEQA, and no mitigation measures are necessary. Residual significant impacts would remain due to the loss of riparian and wetland habitats that support this species, as well as to the removal of spawning gravels and/or instream habitat complexity features important to their habitat.

For VHP-covered activities, compliance with habitat plan conditions and payment of land cover fees will reduce impacts on Pacific lamprey and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts), and mitigate for impacts to their habitats (i.e., by paying land cover fees). In addition, VHP-covered activities will comply with requirements of Conditions 3, 4, and 5 to further protect water quality and avoid and minimize impacts to streams. With the payment of VHP fees, Program Renewal impacts on riparian and wetland habitats would be less than significant under CEQA. Mitigation Measures BIO-3 and BIO-4 would reduce impacts related to the removal of spawning gravel and instream habitat complexity to less than significant levels by augmenting any high-quality spawning gravel that is removed during sediment removal activities and augmenting instream habitat complexity where high-quality features are removed. Thus, with payment of VHP fees and implementation of Mitigation Measures BIO-3 and BIO-4, impacts of VHP-covered impacts on Pacific lamprey are less than significant under CEQA.

For non-VHP-covered activities, Mitigation Measure BIO-5 would be implemented to reduce residual impacts due to the loss of riparian and wetland habitats to a less than significant level by replacing lost habitat functions and values through restoration, preservation, or enhancement. Mitigation Measures BIO-3 and BIO-4 would reduce impacts due to the loss of spawning gravel and instream complexity to less than significant levels by augmenting any high-quality spawning gravel that is removed during sediment removal activities and augmenting instream habitat complexity where high-quality features are removed. Thus, with implementation of Mitigation Measures BIO-3, BIO-4, and BIO-5, impacts of non-VHP-covered impacts on Pacific lamprey are less than significant under CEQA.

Impact BIO-1F: Impacts on the Riffle Sculpin (Less than Significant)

IMPACT ASSESSMENT

The riffle sculpin is a California species of special concern that occurs in a number of Valley Water maintained creeks. It is currently known to occur in the Program Renewal Area in the Guadalupe and Pajaro River and San Francisquito, Upper Penitencia, Lower Silver, Guadalupe, Los Gatos, Alamitos, and Uvas Creeks (Table 3.4-4).

Impacts of the Program Renewal on individual riffle sculpin are similar to those described for CCC and SCCC steelhead under Impact BIO-1D, and as described under "Impacts on Common and Special-Status Fish and Wildlife" above. However, riffle sculpin only occur in the headwaters of a few watersheds in the Program Renewal Area, and the likelihood of maintenance activities overlapping riffle sculpin habitat is low. Therefore, impacts of the Program Renewal on individuals of this species are expected to be extremely limited, and would be less than significant under CEQA.

The total estimated acreages of Program Renewal impacts along watersheds where riffle sculpin potentially occur are provided in Table 3.4-9. Of these, impacts to vegetated wetlands (48.7 acres) and aquatic (riverine) habitat (8.9 acres) would occur directly within riffle sculpin habitat, impacts to herbaceous streambank vegetation (117.9 acres) and woody riparian vegetation (10.0 acres) would occur on stream banks within or directly upslope of riffle sculpin habitat, and impacts to other (non-developed upland) habitat (110.4 acres) would occur outside of the stream channel. However, as described above, riffle sculpin are generally confined to the upper headwaters of a few Program Renewal Area streams, and the majority of the total estimated acreages of Program Renewal impacts are outside of areas where riffle sculpin occur. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Table 3.4-9. Estimated 2027-2036 Total[1] Program Renewal Impacts on Riffle Sculpin Habitat[4]

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Riffle Sculpin							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh)	2.2	38.4	8.1	0.0	0.0	0.0	48.7
Aquatic Habitat (Riverine)	8.9	0.0	0.0	0.0	0.0	0.0	8.9
Herbaceous Streambank (California Annual Grassland)	0.0	21.4	0.4	0.0	68.4	27.6	117.9
Woody Riparian (Riparian Forest and Scrub)	0.0	3.3	6.3	0.4	0.0	0.0	10.0
Other (Non-Developed Uplands)[3]	0.0	0.0	0.6	0.1	83.2	26.6	110.4
Total	**11.1**	**63.1**	**15.4**	**0.6**	**151.6**	**54.2**	**295.8**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided. As discussed under "Impact Assessment" above, although the biological resources subject to maintenance activities are often of lower quality in areas where recent maintenance has previously occurred, the discussion of the impacts that could result from Program Renewal activities is applied to biological resources in all impact areas, regardless of whether or not maintenance has recently occurred along a particular reach (i.e., the most conservative approach is assumed). Thus, the total impact areas for 2027-2036 are ten times the annual impact areas, regardless of whether impacts may occur within the same area multiple times.

[2] All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities, including sediment removal, herbicide application, and vegetation management, may result in temporary and permanent adverse effects on habitat used by riffle sculpin through dewatering, increased turbidity, changes in habitat structure, and other impact pathways. Although the majority of riffle sculpin habitat in these areas would restore to existing conditions following the completion of the maintenance work, maintenance activities would result in the temporary or permanent loss of instream rearing and foraging habitat and instream complexity. Permanent impacts on this species' habitats are expected to be very limited. Because riffle sculpin only occur in a few Program Renewal Area streams within the upper watersheds, and the likelihood of maintenance activities overlapping riffle sculpin habitat is low, impacts of the Program Renewal on habitat for this species are expected to be extremely limited, and would be less than significant under CEQA. In addition, downed tree management activities would benefit fish by contributing to instream complexity and/or ensuring that existing habitat is maintained when large woody debris is retained or modified.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on the riffle sculpin:

- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when special-status fish, including riffle sculpin, are less likely to be present, and provides additional measures to ensure that effects of instream herbicide application on special-status fish are minimized
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized dewatering.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of riffle sculpin.

- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of the riffle sculpin within the Program Renewal Area, as this species is not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). This species is also not expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the riffle sculpin and its habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on aquatic habitats:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats for the riffle sculpin in the Program Renewal Area, including specialty fees per acre of impacts to riparian forest and scrub and coastal and valley freshwater marsh habitats as well as per linear foot of impacts to streams. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

Due to the limited distribution of riffle sculpin in the Program Renewal Area, the likelihood that maintenance activities will affect this species is relatively low. As a result, VHP-covered Program Renewal impacts on this species would be less than significant under CEQA. VHP-Covered Program Renewal activities may also result in temporary or permanent impacts on suitable habitat for riffle sculpin in the Program Renewal Area. However, due to the limited distribution of this species in the Program Renewal Area, such impacts would be very limited, and also less than significant under CEQA. The implementation of Program Renewal BMPs would further reduce VHP-covered Program Renewal impacts on individual riffle sculpin and their habitat. No mitigation measures are necessary.

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. No Program Renewal impacts on riffle sculpin are covered under the VHP, and this species is not anticipated to be added as VHP-covered species in the future. Thus, compliance with VHP conditions will not include measures specifically designed to avoid and minimize impacts on riffle sculpin as a result of the Program Renewal. However, for VHP-covered activities, compliance with habitat plan conditions and payment of land cover fees will reduce impacts on riffle sculpin and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts), and mitigate for impacts to

their habitats (i.e., by paying land cover fees). VHP impact fees paid by Valley Water for VHP-covered impacts on riparian, wetland, and stream habitats would contribute to the VHP's conservation Program Renewal, which includes riparian and wetland habitat restoration to offset impacts of VHP-covered activities. Thus, implementation of Valley Water BMPs and compliance with applicable VHP conditions would further reduce impacts on riparian and wetland habitats within the VHP permit area. No mitigation measures are necessary.

Activities Not Covered under the VHP

Due to the limited distribution of riffle sculpin in the Program Renewal Area, the likelihood that maintenance activities will affect this species is relatively low. As a result, non-VHP-covered Program Renewal impacts on this species would be less than significant under CEQA. Non-VHP-Covered Program Renewal activities may also result in temporary or permanent impacts on suitable habitat for riffle sculpin in the Program Renewal Area. However, due to the limited distribution of this species in the Program Renewal Area, such impacts would be very limited, and also less than significant under CEQA. The implementation of Program Renewal BMPs would further reduce non-VHP-covered Program Renewal impacts on individual riffle sculpin and their habitat. No mitigation measures are necessary.

Herbicide application, which is not covered by the VHP, could affect riffle sculpin in the Program Renewal Area. However, as discussed for CCC and SCCC steelhead above, Valley Water will implement BMPs, including BMP GEN-2, to minimize the effects of herbicides on aquatic species and their habitats. With the implementation of these measures, herbicides would not be applied using methods that could result in direct or indirect impacts on riffle sculpin. Thus, with the implementation of BMPs, impacts of herbicide application on Pacific lamprey would be effectively minimized, and these impacts are less than significant under CEQA. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

Riffle sculpin only occur in a few watersheds, so the likelihood of maintenance activities overlapping riffle sculpin habitat is low. Thus, Program Renewal impacts to riffle sculpin would be less than significant under CEQA, regardless of VHP coverage. Implementation of BMPs and compliance with VHP conditions would effectively minimize Program Renewal impacts on individual riffle sculpin and their habitats, and no mitigation measures are necessary. A mitigation measure that would further reduce impacts on this species and its habitat include Mitigation Measure BIO-5.

Impact BIO-1G: Impacts on Native, Special-Status Minnows (Hitch and Roaches) (Less than Significant)

The Sacramento hitch, Monterey hitch, and southern coastal roach are discussed together because they are all California species of special concern, their abundance in the Program Renewal Area is similar, BMPs to protect these species are similar, and no mitigation is required to reduce impacts of the Program Renewal on these species to less-than-significant levels under CEQA.

IMPACT ASSESSMENT

The Sacramento hitch, Monterey hitch, and southern coastal roach are abundant in several streams throughout the Program Renewal Area, as follows:

- Sacramento hitch occur in Coyote Creek, Coyote Reservoir, the Guadalupe River, Los Gatos Creek, Saratoga Creek, Anderson Reservoir, and San Francisquito Creek.
- Monterey hitch occur in the Pajaro River, Uvas Creek, Llagas Creek, and Pacheco Creek.
- Southern coastal roach occur in Coyote Creek, Upper Penitencia Creek, Uvas Creek, Llagas Creek, North Fork Pacheco Creek, and Arroyo Dos Picachos.

Maintenance activities could occur along these streams in the Program Renewal Area.

Impacts of the Program Renewal on individual Sacramento hitch, Monterey hitch, and southern coastal roach are similar to those described for CCC and SCCC steelhead under Impact BIO-1D, and as described under "Impacts on Common and Special-Status Fish and Wildlife", above. However, given the high abundance of these minnow species throughout the Program Renewal Area, impacts of maintenance activities on individuals and their habitats would not result in substantial impacts on their populations, and this impact would be less than significant under CEQA.

The total estimated acreages of Program Renewal impacts along streams where Sacramento hitch, Monterey hitch, and southern coastal roach potentially occur are provided in Table 3.4-10. Of these, impacts to vegetated wetlands (96.3 acres for Sacramento hitch, 24.9 acres for Monterey hitch, and 64.0 acres for southern coastal roach) and aquatic (riverine) habitat (13.2 acres for Sacramento hitch, 5.9 acres for Monterey hitch, and 10.4 acres for southern coastal roach) would occur directly within habitat for these species, impacts to herbaceous streambank vegetation (224.5 acres for Sacramento hitch, 55.2 acres for Monterey hitch, and 179.4 acres for southern coastal roach) and woody riparian vegetation (20.0 acres for Sacramento hitch, 5.0 acres for Monterey hitch, and 13.2 acres for southern coastal roach) would occur on stream banks within or directly upslope of suitable habitat, and impacts to other (non-developed upland) habitat (210.2 acres for Sacramento hitch, 52.0 acres for Monterey roach, and 175.4 acres for southern coastal roach) would occur outside of the stream channel. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Table 3.4-10. Estimated 2027-2036 Total[1] Program Renewal Impacts on Habitat for Native, Special-Status Minnows[4]

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Sacramento Hitch							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh)	3.3	76.8	16.2	0.0	0.0	0.0	96.3
Aquatic Habitat (Riverine)	13.2	0.0	0.0	0.0	0.0	0.0	13.2
Herbaceous Streambank (California Annual Grassland)	0.0	42.9	0.9	0.0	137.9	42.8	224.5
Woody Riparian (Riparian Forest and Scrub)	0.0	6.5	12.6	0.9	0.0	0.0	20.0
Other (Non-Developed Uplands)[3]	0.0	0.0	1.1	0.2	167.7	41.1	210.2
Total	16.5	126.2	30.8	1.1	305.7	83.9	564.2
Monterey Hitch							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh)	1.5	19.3	4.1	0.0	0.0	0.0	24.9
Aquatic Habitat (Riverine)	5.9	0.0	0.0	0.0	0.0	0.0	5.9
Herbaceous Streambank (California Annual Grassland)	0.0	10.8	0.2	0.0	36.0	8.1	55.2
Woody Riparian (Riparian Forest and Scrub)	0.0	1.6	3.2	0.2	0.0	0.0	5.0
Other (Non-Developed Uplands)[3]	0.0	0.0	0.3	0.1	43.8	7.8	52.0
Total	7.4	31.8	7.7	0.3	79.9	15.9	143.0

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Southern Coastal Roach							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh)	2.6	50.7	10.7	0.0	0.0	0.0	64.0
Aquatic Habitat (Riverine)	10.4	0.0	0.0	0.0	0.0	0.0	10.4
Herbaceous Streambank (California Annual Grassland)	0.0	28.3	0.6	0.0	117.5	33.0	179.4
Woody Riparian (Riparian Forest and Scrub)	0.0	4.3	8.3	0.6	0.0	0.0	13.2
Other (Non-Developed Uplands)[3]	0.0	0.0	0.7	0.1	142.8	31.7	175.4
Total	**13.0**	**83.4**	**20.3**	**0.7**	**260.3**	**64.6**	**442.4**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided. As discussed under "Impact Assessment" above, although the biological resources subject to maintenance activities are often of lower quality in areas where recent maintenance has previously occurred, the discussion of the impacts that could result from Program Renewal activities is applied to biological resources in all impact areas, regardless of whether or not maintenance has recently occurred along a particular reach (i.e., the most conservative approach is assumed). Thus, the total impact areas for 2027-2036 are ten times the annual impact areas, regardless of whether impacts may occur within the same area multiple times.

[2] All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in temporary and permanent adverse effects to habitat used by native, special-status minnows through dewatering, increased turbidity, changes in habitat structure, and other impact pathways. Although the majority of habitat in these areas would restore to existing conditions following the completion of the maintenance work, maintenance activities would result in the temporary or permanent loss of instream rearing and foraging habitat and instream complexity. Permanent impacts to this species' habitats are expected to be very limited. Because Sacramento hitch, Monterey hitch, and southern coastal roach are abundant along streams where they occur in the Program Renewal Area and tolerate a wide range of instream habitat conditions, impacts of the Program Renewal on habitat for this species would not result in substantial effects on their populations, and would be less than significant under CEQA. In addition, downed tree management activities would benefit fish by contributing to instream complexity and/or ensuring that existing habitat is maintained when large woody debris is retained or modified.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on the riffle sculpin:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to avoid and minimize times of year when special-status fish, including native, special-status minnows, are most likely to be present.
- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when native, special-status minnows are less likely to be present.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized dewatering.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and

habitat requirements of Sacramento hitch, Monterey hitch, and southern coastal roach.

- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.

- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of native, special-status minnows within the Program Renewal Area, as these species are not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). These species are also not expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on special-status minnows and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on aquatic habitats:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats for native special-status minnows in the Program Renewal Area, including specialty fees per acre of impacts to riparian forest and scrub and coastal and valley freshwater marsh habitats as well as per linear foot of impacts to streams. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats. VHP impact fees paid by Valley Water for VHP-covered impacts on riparian and wetland habitats would contribute to the VHP's conservation Program Renewal, which includes riparian and wetland habitat restoration to offset impacts of VHP-covered activities.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

Impacts of VHP-covered Program Renewal activities on the Sacramento hitch, Monterey hitch, and southern coastal roach and their habitat are considered less than significant under CEQA due to the abundance of these species throughout the Program Renewal Area. With the implementation of Program Renewal BMPs, potential Program Renewal impacts on these species and their habitats are effectively minimized. No mitigation measures are necessary.

VHP-covered Program Renewal activities may result in temporary or permanent impacts on suitable habitat for Sacramento hitch, Monterey hitch, and southern coastal roach in the Program Renewal Area. The majority of these impacts are also expected to be temporary, as disturbed areas will typically restore to their existing conditions following maintenance activities. However, some permanent impacts will occur where activities such as bank stabilization result in modifications to natural areas. Due to the abundance of these species

in the Program Renewal Area, such impacts would not result in substantial effects on their populations and would be less than significant under CEQA. No mitigation measures are necessary.

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. No Program Renewal impacts on Sacramento hitch, Monterey hitch, or southern coastal roach are covered under the VHP, and this species is not anticipated to be added as VHP-covered species in the future. Thus, compliance with VHP conditions will not include measures specifically designed to avoid and minimize impacts on these species as a result of the Program Renewal. However, for VHP-covered activities, compliance with habitat plan conditions and payment of land cover fees will reduce impacts on riffle sculpin and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts), and mitigate for impacts to their habitats (i.e., by paying land cover fees). VHP impact fees paid by Valley Water for VHP-covered impacts on riparian, wetland, and stream habitats would contribute to the VHP's conservation Program Renewal, which includes riparian and wetland habitat restoration to offset impacts of VHP-covered activities. Thus, implementation of Valley Water BMPs and compliance with applicable VHP conditions would further reduce impacts on riparian and wetland habitats within the VHP permit area. No mitigation measures are necessary.

Activities Not Covered under the VHP

Impacts of non-VHP-covered Program Renewal activities on the Sacramento hitch, Monterey hitch, and southern coastal roach and their habitat are considered less than significant under CEQA due to the abundance of these species throughout the Program Renewal Area. With the implementation of Program Renewal BMPs, potential Program Renewal impacts on these species and their habitats are effectively minimized. No mitigation measures are necessary.

Non-VHP-covered Program Renewal activities may result in temporary or permanent impacts on suitable habitat for Sacramento hitch, Monterey hitch, and southern coastal roach in the Program Renewal Area. The majority of these impacts are also expected to be temporary, as disturbed areas will typically restore to their existing conditions following maintenance activities. However, some permanent impacts will occur where activities such as bank stabilization result in modifications to natural areas. Due to the abundance of these species in the Program Renewal Area, such impacts would not result in substantial effects on their populations and would be less than significant under CEQA. No mitigation measures are necessary.

Herbicide application, which is not covered by the VHP, could affect native special-status minnows in the Program Renewal Area. However, as discussed for CCC and SCCC steelhead above, Valley Water will implement BMPs, including BMP GEN-2, to minimize the effects of herbicides on aquatic species and their habitats. With the implementation of these measures, herbicides would not be applied using methods that could result in direct or indirect impacts on native special-status minnows. Thus, with the implementation of BMPs, impacts of herbicide application on these species would be effectively minimized, and no mitigation measures are necessary.

SUMMARY AND CONCLUSION

Due to the abundance of Sacramento hitch, Monterey hitch, and southern coastal roach in the Program Renewal Area, relative to the lower magnitude of impacts, impacts on these species would be less than significant under CEQA, and no mitigation measures are necessary. Implementation of BMPs and compliance with VHP conditions would further avoid and minimize adverse impacts on native, special-status minnows and their habitats. A mitigation measure that would further reduce impacts on these species and their habitat include Mitigation Measure BIO-5. Where Mitigation Measure BIO-4 (Augmentation of Instream Complexity) is performed along reaches supporting these species, it would also provide a benefit.

Impact BIO-1H: Impacts on Estuarine, Special-Status Fish (Longfin Smelt and Sturgeons) (Less than Significant)

The longfin smelt, white sturgeon, and green sturgeon are discussed together because they occur in similar locations in the Program Renewal Area (i.e., estuarine habitats), BMPs to protect these species are similar, and no mitigation is required to reduce impacts of the Program Renewal on these species to less-than-significant levels under CEQA.

IMPACT ASSESSMENT

San Francisco Bay-Delta longfin smelt (state listed as threatened and federally listed as endangered) and white sturgeon (a candidate for listing under CESA) are known to occur, and southern green sturgeon (federally listed as threatened and a California species of special concern) could occur, in the tidal reaches of South Bay sloughs, as shown on Figure 3.4-15 and described as follows:

- Green sturgeon and white sturgeon can occur in outer Faber Marsh and along lower San Francisquito Creek, lower Permanente Creek/Mountain View Slough, lower Stevens Creek/Williamson Slough, Guadalupe Slough, Moffett Channel, Lower Calabazas Creek, lower San Tomas Aquino Creek, Alviso Slough, and Coyote Slough (including the Coyote Creek main stem and bypass).
- San Francisco Bay-Delta longfin smelt can occur in outer Faber Marsh and along lower Guadalupe Slough, and lower Coyote Slough (including the Coyote Creek main stem but not the Coyote Creek bypass).

While Figure 3.4-15 indicates the geographic areas where maintenance activities are most likely to occur in habitat for these species, activities could occur throughout these tidal reaches in the Program Renewal Area.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities could result in a variety of impacts on special-status fish, including direct and indirect impacts on individuals and temporary and permanent impacts on suitable habitat. Longfin smelt utilize tidal habitats in the Program Renewal Area for spawning, rearing, and foraging, while the green and white sturgeon would occur only as nonbreeding foragers. Thus, Program Renewal activities could affect the survival of all of these species, as well as the reproduction and/or growth of longfin smelt where they occur in the Program Renewal Area. Because the extent of Program Renewal impacts within tidal habitats for these species would be very limited, and because these species occur infrequently and in low numbers, if at all, within the tidal reaches of Program Renewal Area

streams where Program Renewal impacts are expected to occur, Program Renewal impacts on individuals of these species would be considered less than significant under CEQA.

No relocation of tidal aquatic vertebrates is proposed under the Program Renewal.

The total estimated acreages of Program Renewal impacts along streams where longfin smelt, white sturgeon, and green sturgeon potentially occur are provided in Table 3.4-11. Of these, impacts to vegetated wetlands (0.7 acre for longfin smelt and 10.8 acres for white sturgeon and green sturgeon) and aquatic (riverine) habitat (0.0 acres for longfin smelt and 3.7 acres for white sturgeon and green sturgeon) would occur directly within habitat for these species, impacts to herbaceous streambank vegetation (0.7 acre for longfin smelt and 12.5 acres for white sturgeon and green sturgeon) and woody riparian vegetation (0.2 acre for longfin smelt and 9.7 acres for white sturgeon and green sturgeon) would occur on stream banks within or directly upslope of suitable habitat, and impacts to other (non-developed upland) habitat (0.0 acres for longfin smelt and 0.1 acre for white sturgeon and green sturgeon) would occur outside of the stream channel. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Table 3.4-11. Estimated 2027-2036 Total[1] Program Renewal Impacts on Habitat for Estuarine, Special-Status Fish[4]

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Longfin Smelt							
Vegetated Wetlands (Tidal Salt Marsh and Tidal Brackish Marsh)	0.0	0.6	0.1	0.0	0.0	0.0	0.7
Aquatic Habitat (Tidal and Intertidal)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Herbaceous Streambank (California Annual Grassland)	0.0	0.3	0.0	0.0	0.2	0.1	0.7
Woody Riparian (Riparian Forest and Scrub)	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Other (Non-Developed Uplands)[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	1.0	0.2	0.0	0.2	0.1	1.6
White Sturgeon and Green Sturgeon							
Vegetated Wetlands (Tidal Salt Marsh and Tidal Brackish Marsh)	0.9	8.1	1.7	0.0	0.0	0.0	10.8
Aquatic Habitat (Tidal and Intertidal)	3.7	0.0	0.0	0.0	0.0	0.0	3.7
Herbaceous Streambank (California Annual Grassland)	0.0	4.5	0.1	0.0	0.2	7.6	12.5
Woody Riparian (Riparian Forest and Scrub)	0.0	0.7	1.3	0.1	0.2	7.4	9.7
Other (Non-Developed Uplands)[3]	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Total	**4.7**	**13.3**	**3.2**	**0.1**	**0.5**	**15.0**	**36.8**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided. As discussed under "Impact Assessment" above, although the biological resources subject to maintenance activities are often of lower quality in areas where recent maintenance has previously occurred, the discussion of the impacts that could result from Program Renewal activities is applied to biological resources in all impact areas, regardless of whether or not maintenance has recently occurred along a particular reach (i.e., the most conservative approach

is assumed). Thus, the total impact areas for 2027-2036 are ten times the annual impact areas, regardless of whether impacts may occur within the same area multiple times.

[2] All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] Grasslands, oak woodlands, and non-developed irrigated agriculture.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in temporary and permanent adverse effects to habitat used by longfin smelt, green sturgeon, and white sturgeon through dewatering, fish relocations, changes in habitat structure, and other impact pathways. If these species were to occur in reaches near maintenance activities, the health of individuals could be impaired by decreased water quality (e.g., increased turbidity resulting from sediment removal in lower reaches of creeks or spills of fuels or chemicals). However, these estuarine species are adapted to waters with high turbidity, and there is evidence that longfin smelt prefer some turbidity to provide cover from predators (Rosenfield 2010). Thus, fewer adverse effects due to increases in turbidity are expected for these tidal estuarine fish compared to freshwater fish in the Program Renewal Area. These species occur infrequently and in low numbers, if at all, in the immediate Program Renewal Area, and they are not expected to spawn in the Program Renewal Area with the exception of longfin smelt, which are known to spawn in Coyote and Alviso Sloughs (Otolith Geochemistry & Fish Ecology Laboratory 2023). Because of the infrequency of these species' occurrence in the Program Renewal Area, the very limited extent of maintenance activities in tidal habitats, and the fact that instream activities that could result in adverse water quality effects would not extend far downstream in tidal sloughs (i.e., to areas where these species were more likely to occur), a low probability would exist that maintenance activities would result in substantial adverse impacts on these species' habitats; therefore, these impacts are less than significant under CEQA.

Vegetation management activities would occur more widely adjacent to tidal waters; such activities would occur along San Francisquito Creek, the Sunnyvale West Channel, Moffett Channel, Guadalupe Slough, Coyote Slough, Alviso Slough, San Tomas Aquino Creek, and Permanente Creek. These species' habitat would be largely unaffected by stream maintenance activities, but removal of vegetation along sloughs could result in temporary, minor adverse effects to these species by reducing foraging habitat. However, organic matter from vegetation that would be modified by Program Renewal activities is likely not limiting food availability in tidal sloughs in the Program Renewal Area, and thus removal of vegetation by the Program Renewal would have no appreciable effect on food availability for longfin smelt, green sturgeon, or white sturgeon. Some potential would exist for water-quality impacts caused by drift of herbicides into tidal sloughs containing longfin smelt, green or white sturgeon. Degradation of water quality may be particularly detrimental to young fish of species that use Program Renewal Area sloughs as nursery habitat; however, such effects will be minimized by using herbicide formulations that are approved for aquatic environments and by adhering to state and federal regulations concerning herbicide use. Therefore, these impacts are less than significant under CEQA.

The Program Renewal Area contains designated critical habitat for green sturgeon (Figure 3.4-15). Stream maintenance activities would result in both negligible and adverse effects on designated critical habitat, as described above for green sturgeon habitat in general. Specifically, Program Renewal activities could impact the PBFs of critical habitat including water quality, migratory corridors, and sediment quality. As discussed above, due to the low likelihood that green sturgeon would be present within the Program Renewal impact areas when maintenance activities occur (if at all), as well as the limited extent of maintenance activities in tidal habitats, impacts of the Program Renewal on designated critical habitat for green sturgeon due to the temporary or permanent loss of suitable aquatic habitat supporting PBFs would be considered less than significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on estuarine, special-status fish:

- **BMP GEN-2: Instream Herbicide Application** includes general measures to minimize effects of herbicides on aquatic communities.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of the longfin smelt, white sturgeon, and green sturgeon.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.

- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas and excluding fish from work areas in tidal locations to avoid and minimize impacts to water quality and special-status fish.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of estuarine, special-status fish within the Program Renewal Area, as these species are not covered under the VHP and the VHP permit area does not (and will not in the future) extend into tidal areas where these species occur. Because the VHP permit area does not extend into these species' habitats, compliance with habitat plan conditions and the payment of VHP land cover fees and specialty fees are not expected to reduce impacts of the Program Renewal on these species and their habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

No VHP-covered activities will affect the longfin smelt, white sturgeon, and/or green sturgeon or their habitats, as the VHP permit area does not (and will not in the future) extend into tidal habitats.

Activities Not Covered under the VHP

Impacts of non-VHP-covered Program Renewal activities on the longfin smelt, white sturgeon, and green sturgeon and their habitat are considered less than significant under CEQA due to the small number of individuals and limited areas of suitable habitat that would be adversely affected by Program Renewal activities, coupled with the implementation of

Program Renewal BMPs. As a result, potential Program Renewal impacts on these species and their habitats are effectively minimized. No mitigation measures are necessary.

Herbicide application could affect estuarine, special-status fish in the Program Renewal Area. However, as discussed for CCC and SCCC steelhead above, Valley Water will implement BMPs, including BMP GEN-2, to minimize the effects of herbicides on aquatic species and their habitats. With the implementation of these measures, herbicides would not be applied using methods that could result in direct or indirect impacts on native special-status fish. Thus, with the implementation of BMPs, impacts of herbicide application on these species would be effectively minimized, and no mitigation measures are necessary.

SUMMARY AND CONCLUSION

Due to the small number of individual longfin smelt, white sturgeon, and green sturgeon and limited areas of suitable habitat for these species that would be adversely affected by Program Renewal activities, coupled with implementation of BMPs, impacts on these species would be less than significant under CEQA, and no mitigation measures are necessary. Mitigation Measures that would further reduce impacts on these species and their habitat include Mitigation Measures BIO-8 and BIO-13.

Impact BIO-1I: Impacts on Essential Fish Habitat and Species Subject to Fisheries Management Plans (Less than Significant)

IMPACT ASSESSMENT

The Central Valley fall-run Chinook salmon is a California species of special concern, and as noted in Section 3.4.2, "Regulatory Setting," it is the only fish species subject to a fisheries management plan that occurs in the nontidal portions of the Program Renewal Area. This species is regulated by the Pacific Fishery Management Council's *Salmon Fishery Management Plan* (Pacific Fishery Management Council 2024a). Although the Chinook salmon currently occurring in the Program Renewal Area have been recognized as strays from hatchery releases (NMFS 1999, Garcia-Rossi and Hedgecock 2002, Valley Water 2018), NMFS still considers habitat used by Chinook salmon in the South Bay as EFH. Chinook salmon occur in the Program Renewal Area in outer Faber Marsh, Guadalupe Slough, Alviso Slough, the Guadalupe River, Los Gatos Creek, Guadalupe Creek, Alamitos Creek, Coyote Slough, and Coyote Creek (Table 3.4-4). This species uses the lower reaches of streams in the Program Renewal Area as migration corridors between estuarine habitats and upstream spawning and rearing habitats. However, conditions for successful spawning in the Program Renewal Area are marginal because of low water levels in the creeks in the fall, when this species typically spawns.

Several fish species regulated by the *Pacific Groundfish Fisheries Management Plan* (Pacific Fishery Management Council 2023), such as the leopard shark, English sole, starry flounder, and big skate, occur in tidal habitats of South San Francisco Bay and could occur in the tidal reaches of tributaries to the South Bay within the Program Renewal Area. The leopard shark, English sole, starry flounder, and big skate have been documented in Alviso Slough, Coyote Slough, and Guadalupe Slough during surveys conducted by UC Davis (Otolith Geochemistry & Fish Ecology Laboratory 2023). Fish regulated by the *Coastal Pelagics Fisheries Management Plan* (Pacific Fishery Management Council 2024b), such as the northern anchovy, Pacific sardine, and jack mackerel also occur in the South Bay but are less likely to

occur in the uppermost tidal reaches of sloughs where Program Renewal maintenance activities would take place (Otolith Geochemistry & Fish Ecology Laboratory 2023). Because of the presence of at least some species managed by one of these plans, tidal waters in the Program Renewal Area are considered EFH. All EFH supporting fish species regulated by these plans overlaps with EFH supporting Chinook salmon in the Program Renewal Area.

The total estimated acreages of Program Renewal impacts within EFH are provided in Table 3.4-12. Of these, impacts to vegetated wetlands (88.2 acres) and aquatic (riverine) habitat (10.2 acres) would occur directly within habitat for these species, impacts to herbaceous streambank vegetation (223.3 acres) and woody riparian vegetation (18.4 acres) would occur on stream banks within or directly upslope of suitable habitat, and impacts to other (non-developed upland) habitat (212.3 acres) would occur outside of the stream channel. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Within the lower Guadalupe River in the Santa Clara Basin, 1,660 linear feet of the projected sediment removal work is located within specific sediment deposition reaches that are designed to capture sediment when flows exceed capacity of the main channel. These reaches run outside of, but parallel to, the main channel, and allow sediment removal activities to occur without impacting EFH and any Chinook salmon that may be present within the Guadalupe River. The estimated impacts of sediment removal on EFH provided in Table 3.4-12 have been adjusted to account for these sediment deposition reaches.

Table 3.4-12. Estimated 2027-2036 Total[1] Program Renewal Impacts on Essential Fish Habitat[5]

Community and Land Cover	Sediment Removal[2,3] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Essential Fish Habitat							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh, Tidal Salt Marsh, and Tidal Brackish Marsh)	2.5	70.7	14.9	0.0	0.0	0.0	88.2
Aquatic Habitat (Riverine, Tidal, and Intertidal)	10.2	0.0	0.0	0.0	0.0	0.0	10.2
Herbaceous Streambank (California Annual Grassland)	0.0	39.5	0.8	0.0	138.1	44.9	223.3
Woody Riparian (Riparian Forest and Scrub)	0.0	6.0	11.6	0.8	0.0	0.0	18.4
Other (Non-Developed Uplands)[4]	0.0	0.0	1.0	0.2	167.9	43.1	212.3
Total	**12.7**	**116.2**	**28.3**	**1.0**	**306.0**	**88.0**	**552.3**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided. As discussed under "Impact Assessment" above, although the biological resources subject to maintenance activities are often of lower quality in areas where recent maintenance has previously occurred, the discussion of the impacts that could result from Program Renewal activities is applied to biological resources in all impact areas, regardless of whether or not maintenance has recently occurred along a particular reach (i.e., the most conservative approach is assumed). Thus, the total impact areas for 2027-2036 are ten times the annual impact areas, regardless of whether impacts may occur within the same area multiple times.

[2] All impacts of sediment removal, vegetation management (<6" dbh), and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] The estimated impacts of sediment removal on EFH have been adjusted to account for the presence of sediment deposition reaches along the lower Guadalupe River.

[4] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[5] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

As described for CCC steelhead habitat under Impact BIO-1D, the primary impact to Chinook salmon EFH resulting from sediment removal would be the removal of spawning gravel. Because 2027–2036 sediment removal activities include reaches where Chinook salmon would be likely to spawn, such as in the Guadalupe River watershed, adverse impacts of sediment removal on Chinook salmon EFH may occur because of the removal of spawning gravel. Gravel removal would reduce the extent and availability of potential spawning habitat in the short term by removing existing spawning habitat and in the long term by reducing gravel supply within a creek. However, conditions for successful spawning in the Program Renewal Area are marginal because these fish spawn during fall when streamflow is generally at its lowest in these systems. Furthermore, despite occasional occurrences and successful spawning within Program Renewal Area streams, there is no evidence to suggest that Chinook salmon have become naturalized in the Program Renewal Area and as such, the run size of Chinook salmon is small and dependent on hatchery releases directly to San Francisco Bay. Therefore, impacts from sediment removal on Chinook salmon EFH within the Program Renewal Area, although adverse, would be considered less than significant under CEQA.

Temporary and permanent impacts of aquatic herbicide application, vegetation management, downed tree management, and other maintenance activities within aquatic and vegetated wetland habitats used by Chinook salmon in lower portions of watersheds (i.e., areas used for migration and rearing, but not for spawning), and within tidal areas used by other fish species regulated by fisheries management plans, would also occur. Effects to upstream habitats utilized by Chinook salmon resulting from vegetation management and downed tree management would be similar to those discussed under Impact BIO-1D; however, juvenile Chinook salmon within Program Renewal Area streams typically out-migrate February through June, spending substantially less time rearing in Program Renewal Area streams than CCC and SCCC steelhead. Therefore, effects due to vegetation management and downed tree management would be less than those expected for CCC and SCCC steelhead and less than significant under CEQA on Chinook salmon EFH. In addition, downed tree management activities would benefit fish by contributing to instream complexity and/or ensuring that existing habitat is maintained when large woody debris is retained or modified.

As discussed under Impact BIO-1H above, species' habitat within tidal portions of the Program Renewal Area would largely be unaffected by stream maintenance activities, but removal of vegetation along sloughs could result in temporary, minor adverse impacts to these species by reducing foraging habitat. Some potential would exist for water-quality impacts caused by drift of herbicides into tidal sloughs. Program Renewal activities would have limited effects on habitats and species located in tidal waters; however, degradation of water quality may be particularly detrimental to young fish of species that use South Bay sloughs as nursery habitat. Nevertheless, no substantial loss or degradation of EFH is expected to occur as a result of Program Renewal activities, and impacts on tidal EFH are less than significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on EFH and fish species regulated by the fisheries management plans:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to avoid and minimize times of year when salmonids are most likely to be present.
- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when salmonids are less likely to be present. In addition, herbicides will not be applied directly to water, and herbicide application will comply with the 2014 Salmonid Injunction.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work. As feasible, staging areas and access routes will be located within existing disturbed areas and along existing access roads.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized dewatering. Streams that support steelhead or Pacific lamprey will require a relocation effort and/or initial on-site monitoring by a qualified biologist, depending on seasonal conditions.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of Chinook salmon.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality and special-status fish.
- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas in tidal locations to avoid and minimize impacts to water quality and aquatic species.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of fish species regulated by the *Pacific Groundfish Fisheries Management Plan* or *Coastal Pelagics Fisheries Management Plan*, as these species are not covered under the VHP and the VHP permit area does not (and will not in the future) extend into tidal areas where these species occur. Because the VHP permit area does not extend into these species' habitats, compliance with habitat plan conditions and the payment of VHP land cover fees and specialty fees are not expected to reduce impacts of the Program Renewal on these species and their habitats.

Within the VHP permit area, no VHP conditions protect the Chinook salmon, as this species is not covered under the VHP or expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the Chinook salmon and its habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on aquatic habitats:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on nontidal habitats for Chinook salmon in the Program Renewal Area, including specialty fees per acre of impacts to riparian forest and scrub and coastal and valley freshwater marsh habitats as well as per linear foot of impacts to streams; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

No VHP-covered activities will affect fish species regulated by the *Pacific Groundfish Fisheries Management Plan* or *Coastal Pelagics Fisheries Management Plan* or their habitats, as the VHP permit area does not (and will not in the future) extend into tidal habitats.

The majority of Program Renewal activities within nontidal habitats will be covered under the VHP once the amendment is approved. No Program Renewal impacts on Chinook salmon or other EFH-associated fish species are covered under the VHP, and these species are not anticipated to be added as VHP-covered species in the future. Thus, compliance with VHP conditions will not include measures specifically designed to avoid and minimize impacts on Chinook salmon or other EFH-associated fish as a result of the Program Renewal. However, for VHP-covered activities, compliance with habitat plan conditions and payment of land cover fees will reduce impacts on Chinook salmon and other EFH-associated fish species and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts), and mitigate for impacts to their habitats (i.e., by paying land cover fees). VHP impact fees paid by Valley Water for VHP-covered impacts on riparian, wetland, and stream habitats would contribute to the VHP's conservation Program Renewal, which includes riparian and wetland habitat restoration to offset impacts of VHP-covered activities. Thus, implementation of Valley Water BMPs and compliance with applicable VHP conditions would reduce impacts on riparian and wetland habitats within the VHP permit

area. In addition, VHP-covered activities will comply with requirements of Conditions 3, 4, and 5 to further protect water quality and avoid and minimize impacts to streams.

With the implementation of Program Renewal BMPs, adverse impacts of VHP-covered Program Renewal activities on individual Chinook salmon as well as on wetland and riparian habitats that support these species would be less than significant under CEQA, and no mitigation measures are necessary. Residual adverse impacts would remain due to temporary and permanent impacts to riparian and wetland habitats, as well as due to the removal of spawning gravels and/or instream habitat complexity features (e.g., due to downed tree management) important to Chinook salmon habitat and EFH. However, the majority of these impacts are expected to be temporary, as disturbed areas will typically restore to their existing conditions following maintenance activities. Some permanent impacts will occur where activities such as bank stabilization result in modifications to natural areas. Nevertheless, due to the small run size of Chinook salmon within Program Renewal Area streams, such impacts are unlikely to limit the current number of spawning adults within the Program Renewal Area. As a result, these impacts are less than significant under CEQA, and no mitigation measures are necessary.

Compliance with applicable VHP conditions and payment of VHP land cover fees would reduce impacts on riparian and wetland habitats within the VHP permit area. In addition, VHP-covered activities will comply with requirements of Conditions 3, 4, and 5 to further protect water quality and avoid and minimize impacts to streams. Mitigation Measures BIO-3, BIO-4, and BIO-5 would further benefit Chinook salmon and EFH in the Program Renewal Area by augmenting any high-quality spawning gravel that is removed during sediment removal activities, augmenting instream habitat complexity where high-quality features are removed, and replacing lost riparian and wetland habitat functions and values through restoration, preservation, or enhancement.

Activities Not Covered under the VHP

With the implementation of Program Renewal BMPs, adverse impacts of non-VHP-covered Program Renewal activities on individual Chinook salmon as well as on wetland and riparian habitats that support these species would be less than significant under CEQA, and no mitigation measures are necessary. Residual adverse impacts would remain due to temporary and permanent impacts to riparian and wetland habitats, as well as due to the removal of spawning gravels and/or instream habitat complexity features important to Chinook salmon habitat and EFH. However, the majority of these impacts are expected to be temporary, as disturbed areas will typically restore to their existing conditions following maintenance activities. Some permanent impacts will occur where activities such as bank stabilization result in modifications to natural areas. Nevertheless, due to the small run size of Chinook salmon within Program Renewal Area streams, such impacts are unlikely to limit the current number of spawning adults within the Program Renewal Area. As a result, these impacts are less than significant under CEQA, and no mitigation measures are necessary.

Mitigation Measures BIO-3, BIO-4, and BIO-5 would further benefit Chinook salmon and EFH in the Program Renewal Area by augmenting any high-quality spawning gravel that is removed during sediment removal activities, augmenting instream habitat complexity where high-quality features are removed, and replacing lost riparian and wetland habitat functions and values through restoration, preservation, or enhancement.

Herbicide application, which is not covered under the VHP, could affect EFH and fish species regulated by fisheries management plans in the Program Renewal Area. However, as discussed for CCC and SCCC steelhead above, Valley Water will implement BMPs, including BMP GEN-2, to minimize the effects of herbicides on aquatic species and their habitats. With the implementation of these measures, herbicides would not be applied using methods that could result in direct or indirect impacts on native special-status fish. Thus, with the implementation of BMPs, impacts of herbicide application on these species would be effectively minimized, and no mitigation measures are necessary.

SUMMARY AND CONCLUSION

Maintenance activities could result in direct and indirect effects on EFH and fish species regulated by the Coastal Pelagics and Pacific Groundfish Fisheries Management Plans. However, these impacts are considered less than significant under CEQA due to the small number of individuals and limited areas of suitable habitat that would be adversely affected by Program Renewal activities. With the implementation of Program Renewal BMPs, adverse impacts of non-VHP-covered Program Renewal activities on individual Chinook salmon as well as on wetland and riparian habitats that support these species would be less than significant under CEQA, and no mitigation measures are necessary.

For VHP-covered activities, compliance with applicable VHP conditions and payment of VHP land cover fees would further reduce impacts on riparian, stream, and wetland habitats within the VHP permit area. In addition, VHP-covered activities will comply with requirements of Conditions 3, 4, and 5 to further protect water quality and avoid and minimize impacts to streams.

Regardless of VHP coverage, Mitigation Measures BIO-3, BIO-4, and BIO-5 would further benefit Chinook salmon and EFH in the Program Renewal Area by augmenting any high-quality spawning gravel that is removed during sediment removal activities, augmenting instream habitat complexity where high-quality features are removed, and replacing lost riparian and wetland habitat functions and values through restoration, preservation, or enhancement.

Impact BIO-1J: Impacts on the California Tiger Salamander, California Red-Legged Frog, and Foothill Yellow-Legged Frog (Less than Significant with Mitigation)

The California tiger salamander, California red-legged frog, and foothill yellow-legged frog are discussed together because they occur in similar locations in the Program Renewal Area (i.e., primarily areas outside of the Valley floor), Program Renewal impacts on the species are similar, targeted BMPs will be implemented to protect each species, and mitigation measures to reduce impacts of the Program Renewal to less-than-significant levels under CEQA are also similar.

IMPACT ASSESSMENT

Figures 3.4-3, 3.4-4, and 3.4-5 depict the current mapped distributions of the California tiger salamander, California red-legged frog, and foothill yellow-legged frog in the Program Renewal Area, respectively. This mapping is based on known occurrences of these species (from CNDDB and Valley Water records) as well as the extent of urban and agricultural land uses on the Valley floor, which preclude the presence of viable breeding populations. Suitable habitat for foothill yellow-legged frogs is more restricted in the Program Renewal

Area compared to habitat for California tiger salamanders and California red-legged frogs because the foothill yellow-legged frog does not typically occur below major reservoirs in Santa Clara County.

The California tiger salamander, a state and federally threatened species, has been largely extirpated from the Santa Clara Valley floor, and extant populations in the Program Renewal Area are now limited primarily to areas with seasonal pools and stock ponds around its periphery (Figure 3.4-3). Within these areas, the species is most likely to be found in less heavily developed areas that have not been heavily cultivated. No suitable breeding habitat for California tiger salamanders is present along Program Renewal Area streams, which do not support seasonal ponds or pools lacking nonnative predators, and California tiger salamanders have not been detected breeding along these streams during SMP-1 and SMP-2 maintenance activities or associated pre-activity surveys conducted by Valley Water. Further, although individuals have been recorded along or adjacent to some of the creeks in the Program Renewal Area (e.g., San Francisquito Creek, Matadero Creek, Permanente Creek, Guadalupe Creek, Calero Creek, Thompson Creek, Upper Silver Creek, Coyote Creek, and Uvas Carnadero Creek) (Figure 3.4-3), no known occurrences are located within the immediate maintenance activity impact areas. Tiger salamanders are only expected to occur within Program Renewal work areas during seasonal movements to and from breeding ponds, or possibly while using upland refugia along these streams. Due to the species' limited distribution in the Program Renewal Area, as well as the low probability of occurrence within maintenance activity areas, potential impacts of maintenance activities on the California tiger salamander and its habitat are relatively limited. However, where work areas are located within potential dispersal distance (1.3 miles) of breeding ponds, with no intervening dispersal barriers, individuals may travel through work locations during seasonal (wet-season) movements and may also use upland burrows and crevices within work sites as refugia year-round.

The California red-legged frog is federally listed as threatened and a California species of special concern. As discussed for the California tiger salamander above, this species has been largely extirpated from areas of the Santa Clara Valley floor that have been impacted by urban development and agricultural activities. Suitable breeding habitat for the California red-legged frog is potentially present along Program Renewal Area streams, as populations of this species are present along Matadero Creek and along Permanente Creek. In addition, single adult California red-legged frogs have been detected by Valley Water within maintenance work areas along Berryessa Creek at Piedmont Road in San Jose in 2017 and along Uvas Carnadero Creek south of State Route 25 in 2017, and there was an unconfirmed report from Llagas Creek at Rucker Avenue in Gilroy in 2016. These records indicate that the species can occasionally occur in valley floor locations even when breeding populations are absent. Additional individuals have been recorded along other creeks in the Program Renewal Area, including Adobe Creek, Calero Creek, and Coyote Creek, among others (Figure 3.4-4) (CNDDB 2024). California red-legged frogs are expected to occur within Program Renewal work areas primarily during seasonal movements to and from breeding areas, or possibly while using upland refugia along these streams, although breeding individuals can also potentially occur. Due to the species' limited distribution in the Program Renewal Area, as well as the low probability of occurrence within maintenance activity areas, potential impacts of maintenance activities on the California red-legged frog and its habitat are relatively limited. However, where work areas occur within potential breeding locations (e.g., along sections Matadero Creek and Permanente Creek where the species occurs), or are located within potential dispersal distance (1.0 mile) of breeding ponds with no

intervening dispersal barriers, individuals may be present; may travel through work locations during seasonal (wet-season) movements; and/or may also use upland burrows, crevices, woody debris, and vegetation within work sites as refugia year-round.

The foothill yellow-legged frog is state and federally listed as threatened. This species' distribution in the Program Renewal Area is primarily limited to streams above major reservoirs (Figure 3.4-5). Nevertheless, individuals have been recorded along or adjacent to several creeks where maintenance activities are projected to occur (e.g., Los Gatos Creek, Alamitos Creek, and Guadalupe Creek) (Figure 3.4-5). Although its distribution in the Program Renewal Area is more limited compared to the California tiger salamander and California red-legged frog, this species' primary habitat consists of stream channels where maintenance activities are focused, and thus Program Renewal activities occurring within the mapped distribution of this species are more likely to impact foothill yellow-legged frogs compared to California tiger salamanders and California red-legged frogs, and may also impact breeding habitat for this species. However, due to limited distribution of the foothill yellow-legged frog in the Program Renewal Area, potential impacts of maintenance activities on this species and its habitat are very limited. Nevertheless, where work areas are located within portions of the Program Renewal Area where this species potentially occurs, maintenance activities could affect breeding and nonbreeding individuals of this species, as well as suitable habitat.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on amphibians such as the California tiger salamander, California red-legged frog, and foothill yellow-legged frog, foraging or dispersal habitat for all of these species, and breeding habitat for the foothill yellow-legged frog. However, the vast majority of projected sediment removal, in-stream vegetation management, and aquatic herbicide application activities would be located in areas where these species do not currently occur (Figures 3.4-3, 3.4-4, and 3.4-5). Because most projected activities would occur in Valley-floor areas where these species are absent, impacts within areas that could support these species will be very limited.

Because California tiger salamanders are not expected to breed in Program Renewal Area channels, and individuals spend limited time above ground in upland habitats, Program Renewal activities likely would have limited effects on the survival, reproduction, and/or growth of this species. In addition, any tiger salamanders present within areas affected by maintenance activities would be likely to be underground during daylight hours and dry periods, when such activities would occur, thus reducing the potential for impacts of many maintenance activities that do not result in earthwork or soil compaction. The potential for effects on tiger salamanders resulting from Program Renewal activities would rather pertain primarily to the physical presence of people and equipment during maintenance activities. Some potential would exist for tiger salamanders to be exposed to direct and indirect disturbance from people and equipment, and maintenance activities would also reduce vegetative cover for individuals while these animals are moving aboveground.

In contrast, foothill yellow-legged frogs and at least some California red-legged frogs could breed, forage, and disperse along Program Renewal Area streams. Thus, as described under "Impacts on Common and Special-Status Fish and Wildlife" above, Program Renewal activities could affect the survival, reproduction, and/or growth of foothill yellow-legged frogs and California red-legged frogs where they occur in the Program Renewal Area. In addition, the physical presence of people and equipment during maintenance activities can

result in adverse effects on individuals due to direct and indirect disturbance, as described for California tiger salamanders above. Maintenance activities would also reduce vegetative cover for yellow-legged frogs and California red-legged frogs along streams in the Program Renewal Area.

Because California red-legged frogs and foothill yellow-legged frogs spend most of their time in moist or aquatic habitats, maintenance activities that would occur in upland areas (e.g., on levee tops and upper banks outside of the stream channel) have a lower potential to result in direct effects on these species compared to in-stream activities. In contrast, because California tiger salamanders spend most of their time in upland habitats (e.g., in burrows), in-stream maintenance activities have a lower potential to result in direct effects on this species compared to activities in upland areas.

Mitigation activities such as gravel augmentation (Mitigation Measure BIO-3) and installation of instream complexity (Mitigation Measure BIO-4) could also result in direct and indirect impacts to California red-legged frogs and foothill yellow-legged frogs during installation; however, the habitat enhancements provided by these measures would be beneficial to both of these species.

Vegetation management activities would include the application of herbicides, as discussed under "Impacts on Common and Special-Status Fish and Wildlife" above. Herbicides could result in adverse effects on California tiger salamanders, California red-legged frogs[2], and foothill yellow-legged frogs, including direct effects on the survival, reproduction, and growth of individuals, as well as indirect effects including reductions in available prey and habitat modification.

Because the California tiger salamander, California red-legged frog, and foothill yellow-legged frog are so scarce that impacts to any individuals could affect populations of these species, any take of individuals of these species that would result in a substantial (i.e., population-level) effect, and would be considered significant under CEQA.

Program Renewal activities will result in temporary and permanent impacts on breeding habitat for the foothill yellow-legged frog and California red-legged frog, and on foraging and dispersal habitat for the California tiger salamander, California red-legged frog, and foothill yellow-legged frog in portions of the Program Renewal Area where these species occur. The majority of these impacts are expected to be temporary, as disturbed upland areas will typically be revegetated following maintenance activities. However, some permanent impacts are expected to occur where activities such as bank stabilization and animal conflict

[2] Although the USEPA has determined that the pesticides proposed for use under the Program Renewal are likely to affect adversely the California red-legged frog, formal consultation between the USEPA and USFWS has not been completed. Therefore, the USEPA has not yet concluded whether each of these pesticides' registration, label, or use instructions needs to be altered so that use of a pesticide will not take or jeopardize the continued existence of the California red-legged frog. Valley Water would continue to use herbicides in compliance with existing applicable state and federal laws and in accordance with the voluntary guidelines established in the PRESCRIBE database managed by the California Department of Pesticide Regulation, which restricts the use of triclopyr in habitat occupied by the California red-legged frog. If new laws or guidelines related to herbicide use are established during the course of the Program Renewal, Valley Water will comply with those regulations as well.

management focused on burrowing mammals result in modifications to natural areas, or removal of suitable refugia.

The total estimated acreages of Program Renewal impacts within suitable habitat for the California tiger salamander, California red-legged frog, and foothill yellow-legged frog are provided in Table 3.4-13. Of these, impacts to vegetated wetlands (6.7 acres for the California red-legged frog, 16.2 acres for the California tiger salamander, and 1.2 acres for the foothill yellow-legged frog) and aquatic (riverine) habitat (1.7 acres for the California red-legged frog, 1.2 acres for the California tiger salamander, and 0.3 acre for the foothill yellow-legged frog) would affect breeding, foraging, and/or dispersal habitat for these species. Impacts within herbaceous streambank habitat (6.0 acres for the California red-legged frog, 9.9 acres for the California tiger salamander, and 0.5 acre for the foothill yellow-legged frog) and woody riparian habitat (1.3 acres for the California red-legged frog, 3.4 acres for the California tiger salamander, and 0.2 acre for the foothill yellow-legged frog) would affect foraging, dispersal, and refugial habitat for these species, as well as aestivation habitat for the California tiger salamander where burrows are present. Impacts within other (non-developed uplands) (3.0 acres for the California red-legged frog, 2.7 acres for the California tiger salamander, and 0.0 acres for the foothill yellow-legged frog) would affect dispersal habitat for the California tiger salamander and California red-legged frog, as well as aestivation habitat for the California tiger salamander where burrows are present. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Table 3.4-13. Estimated 2027-2036 Total[1] Program Renewal Impacts to Habitats for California Red-Legged Frogs, California Tiger Salamanders, and Foothill Yellow-Legged Frogs[4]

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
California Red-Legged Frog							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh and Seasonal Wetland)	0.4	5.2	1.1	0.0	0.0	0.0	6.7
Aquatic Habitat (Riverine)	1.7	0.0	0.0	0.0	0.0	0.0	1.7
Herbaceous Streambank (California Annual Grassland)	0.0	2.9	0.1	0.0	0.0	3.0	6.0
Woody Riparian (Riparian Forest and Scrub)	0.0	0.4	0.8	0.1	0.0	0.0	1.3
Other (Non-Developed Uplands)[3]	0.0	0.0	0.1	0.0	0.0	2.9	3.0
Total	**2.1**	**8.5**	**2.1**	**0.1**	**0.0**	**6.0**	**18.7**
California Tiger Salamander							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh and Seasonal Wetland)	0.3	13.1	2.8	0.0	0.0	0.0	16.2
Aquatic Habitat (Riverine)	1.2	0.0	0.0	0.0	0.0	0.0	1.2
Herbaceous Streambank (California Annual Grassland)	0.0	7.3	0.2	0.0	0.5	1.9	9.9
Woody Riparian (Riparian Forest and Scrub)	0.0	1.1	2.2	0.2	0.0	0.0	3.4

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Other (Non-Developed Uplands)[3]	0.0	0.0	0.2	0.0	0.6	1.8	2.7
Total	**1.5**	**21.6**	**5.3**	**0.2**	**1.1**	**3.7**	**33.4**

Foothill Yellow-Legged Frog

Vegetated Wetlands (Coastal and Valley Freshwater Marsh)	0.1	0.9	0.2	0.0	0.0	0.0	1.2
Aquatic Habitat (Riverine)	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Herbaceous Streambank (California Annual Grassland)	0.0	0.5	0.0	0.0	0.0	0.0	0.5
Woody Riparian (Riparian Forest and Scrub)	0.0	0.1	0.2	0.0	0.0	0.0	0.2
Other (Non-Developed Uplands)[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**0.4**	**1.5**	**0.4**	**0.0**	**0.0**	**0.0**	**2.2**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided.

[2] All impacts of sediment removal, aquatic herbicide application, and vegetation management (<6" dbh) are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

Designated critical habitat for the California tiger salamander and California red-legged frog occurs within the Program Renewal Area (Figures 3.4-3 and 3.4-4). Program Renewal activities could affect designated critical habitat for these species as described in this section and under "Impacts on Common and Special-Status Fish and Wildlife." Specifically, Program Renewal activities could affect the PBFs of California tiger salamander critical habitat involving upland habitats with subterranean refugia and upland dispersal habitat, as described generally above. Program Renewal activities could also affect the PBFs of critical habitat involving upland and dispersal habitat for the California red-legged frog. However, based on work that has occurred during SMP-1 and SMP-2, maintenance work in critical habitat for California tiger salamander and California red-legged frog is anticipated to be rare.

Impacts that result in the removal of suitable breeding, foraging, and/or dispersal habitat for the California tiger salamander, California red-legged frog, and/or foothill yellow-legged frog within the mapped distributions of these species in the Program Renewal Area (regardless of whether critical habitat is present) would be considered significant under CEQA due to the restricted habitat range remaining to these species in the Program Renewal Area.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize impacts on the California tiger salamander, California red-legged frog, and foothill yellow-legged frog and their habitats:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to avoid and minimize times of year when special-status amphibians are most likely to be present.
- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when special-status amphibians are less likely to be present. In addition, this BMP provides measures to ensure that effects of instream herbicide application on aquatic wildlife are minimized.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-12: Protection of California Red-Legged Frogs and California Tiger Salamanders** requires pre-activity surveys in locations where these species are likely to be encountered, and appropriate protective measures if individuals are found. Individuals may be captured and relocated from the work area by a qualified biologist. As stated in the BMP, these pre-activity surveys and protective measures are not required for VHP-covered activities but may be implemented by Valley Water on a voluntary basis.

- **BMP GEN-13: Protection of Foothill Yellow-Legged Frogs** requires pre-activity surveys in locations where this species is likely to be encountered, and appropriate protective measures if individuals are found. Individuals may be captured and relocated from the work area by a qualified biologist. As stated in the BMP, these pre-activity surveys and protective measures are not required for VHP-covered activities but may be implemented by Valley Water on a voluntary basis.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of the California tiger salamander, California red-legged frog, and foothill yellow-legged frog.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be

managed to ensure that it does not cause water quality degradation in a live stream.

- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.
- **BMP BANK-2: Concrete Use near Waterways** provides measures to ensure that fresh concrete is isolated until it no longer poses a threat to water quality.
- **BMP ANI-4: Animal Control in Sensitive Amphibian Habitat** will ensure that no harmful fumigants will be used, that fumigants will not be used within special-status amphibian habitat, and that any live traps will have openings to allow special-status amphibians to safely exit.

In addition, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on the VHP-covered California tiger salamander, California red-legged frog, and foothill yellow-legged frog and their habitats in the Program Renewal Area, once the SMP is added to the VHP as a covered activity:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species, including the California tiger salamander, California red-legged frog, and foothill yellow-legged frog.
- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

For VHP-covered activities, no species-specific protection measures are provided for the California tiger salamander, California red-legged frog, or foothill yellow-legged frog. However, as stated in BMPs GEN-12 and GEN-13, Valley Water may implement the species protection measures outlined in those BMPs for VHP-covered activities to protect these species on a voluntary basis.

Valley Water would also pay VHP land cover fees and wetland specialty fees to reduce impacts on suitable habitats; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management

targeted at creeks, wetlands, and grasslands that support the California tiger salamander, California red-legged frog, and foothill yellow-legged frog.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With implementation of BMPs, compliance with VHP conditions, and payment of VHP fees, impacts of VHP-covered Program Renewal activities on the VHP-covered California tiger salamander, California red-legged frog, foothill yellow-legged frog, and their habitats are less than significant under CEQA, and no mitigation measures are necessary.

For VHP-covered activities, no species-specific protection measures are provided for the California tiger salamander, California red-legged frog, or foothill yellow-legged frog. Valley Water may implement the species protection measures outlined in BMPs GEN-12 and GEN-13 for VHP-covered activities to protect these species on a voluntary basis.

Activities Not Covered under the VHP

Herbicide application, which is not covered under the VHP, is restricted within the areas shown on Figure 3.4-1 (which includes designated critical habitat for California red-legged frogs and additional habitat areas), and BMP GEN-2 provides a list of restrictions on herbicide use within streams in the Program Renewal Area. Herbicide use would also be subject to Program Renewal requirements, including application only during appropriate wind conditions to minimize the spread of these chemicals to untargeted areas. With the implementation of BMPs, impacts of herbicide application on the California tiger salamander, California red-legged frog, and foothill yellow-legged frog would be less than significant under CEQA.

No maintenance activities within tidal portions of the Program Renewal Area will result in adverse effects on the California tiger salamander, California red-legged frog, foothill yellow-legged frog, or their habitat, as these species do not occur within or near tidal reaches of the Program Renewal Area. For other non-VHP-covered maintenance activities, with the implementation of BMPs, effects of the Program Renewal on the California tiger salamander, California red-legged frog, foothill yellow-legged frog, and their habitat would be minimized. Residual effects of non-VHP-covered Program Renewal activities on these species and their habitat include limited temporary and permanent impacts on suitable breeding, dispersal, and foraging habitat (for all three species), and refugial habitat (for the California tiger salamander), as well as physiological stress, a potential greater risk of predation, and/or increased competition of individuals that are relocated from work areas. Due to the rarity of these species in the region and the limited availability of suitable habitat, these impacts result in substantial (i.e., population-level) effects, and would be significant under CEQA. Mitigation Measures BIO-6 and BIO-7 below would be implemented to reduce this impact to a less-than-significant level unless and until all Program Renewal activities impacting the California tiger salamander, California red-legged frog, and foothill yellow-legged frog become VHP-covered activities (at which time Valley Water will comply with all VHP conditions rather than implementing Mitigation Measures BIO-6 and BIO-7). Mitigation

provided under Mitigation Measures BIO-12 and BIO-13 would further benefit these species, if the mitigation occurs within the range of these species.

Mitigation Measure BIO-6: Avoid Impacts on California Tiger Salamander, California Red-Legged Frog, and Foothill Yellow-Legged Frog Habitat

To the maximum extent feasible, Valley Water will avoid conducting non-VHP-covered maintenance activities that do not provide an ecological benefit within portions of the Program Renewal Area that may be occupied by the California tiger salamander (as shown on Figure 3.4-3), California red-legged frog (as shown on Figure 3.4-4), or foothill yellow-legged frog (as shown on Figure 3.4-5). As discussed under *Mitigation Approach* above, ecologically beneficial activities and activities located within existing PMAs (for the activity being performed) do not require compensatory mitigation. Whether an activity is ecologically beneficial will be determined by a qualified Valley Water biologist. If all non-ecologically beneficial impacts within areas occupied by the California tiger salamander, California red-legged frog, or foothill yellow-legged frog and located outside of existing PMAs (for the activity being performed) are avoided, no compensatory mitigation (i.e., Mitigation Measure BIO-7) is required. To determine whether Program Renewal impacts would occur within the potential range of these species, Valley Water will rely on the mapping in Figures 3.4-3, 3.4-4, and 3.4-5. This mapping may be modified as appropriate over the course of the period 2027–2036 based on new information.

In addition, a Valley Water biologist will determine whether the impact areas support suitable habitat for one or more of these species. Developed and intensively managed agricultural lands without mammal burrows are considered unsuitable; all other land cover types are considered potential California tiger salamander and California red-legged frog habitat. Suitable foothill yellow-legged frog habitat consists of stream habitat and adjacent undeveloped areas.

Mitigation Measure BIO-7: Compensatory Mitigation for Impacts on Habitat for the California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog, and Northwestern Pond Turtle

If the assessment described under Mitigation Measure BIO-6 above determines that work activities would occur within areas potentially supporting California tiger salamanders, California red-legged frogs, and/or foothill yellow-legged frogs, the impact is not in an existing PMA (for the activity being performed), and the impact is not avoided either through avoiding the work activity or through planning work in a way that results in an overall neutral or positive effect on the site's habitat function for the species, Valley Water will provide mitigation to compensate for impacts on these species and their habitat. At the end of each year's maintenance period, Valley Water will determine the extent of impacts to lands that are both within the potential range of these species and within potentially suitable habitat for the species.

If work activities will impact wetland, aquatic, and/or riparian habitats that support northwestern pond turtles, Valley Water will provide mitigation to compensate for impacts on this species and its habitat. At the end of each year's maintenance period, Valley Water will determine the extent of impacts to lands supporting this species.

Compensation for these effects may be provided by Valley Water via the payment of VHP impact fees through the Habitat Agency's Voluntary Fee Payments Policy. The VHP will require the payment of fees in accordance with the types and acreage of all land cover types impacted by the activity (including areas within and outside of waters of the U.S./state, and when no impacts on individual California tiger salamanders, California red-legged frogs, foothill yellow-legged frogs, and/or northwestern pond turtles have occurred).

Alternatively, if Valley Water staff, in consultation with resource agencies, determines that impacts on these species' habitats occur within riparian and wetland habitats, mitigation may be provided by Valley Water via the implementation of Mitigation Measures BIO-12 and/or BIO-13, as applicable. The mitigation provided will be required to be located in areas where habitat creation, restoration, and preservation will benefit the affected species, and such that mitigation according to these measures occurs at a ratio of no less than 1:1 (on an acreage basis). Valley Water will determine whether impacted habitat is suitable for this species on the basis of surveys or comparison of habitat conditions to those in known occupied areas.

SUMMARY AND CONCLUSION

Maintenance activities could affect the California tiger salamander, California red-legged frog, foothill yellow-legged frog, and their habitat within portions of the Program Renewal Area where these species occur (Figures 3.4-3, 3.4-4, and 3.4-5). Valley Water will implement applicable Program Renewal BMPs to avoid and minimize impacts on these species. In addition, VHP-covered Program Renewal activities will adhere to applicable VHP conditions to avoid and minimize impacts on these species and their habitat (i.e., Conditions 1, 3, 5, and 12), and pay VHP fees based on impacts to land cover types. With the implementation of these measures, VHP-covered Program Renewal impacts on the California tiger salamander, California red-legged frog, foothill yellow-legged frog, and their habitats are less than significant under CEQA. However, impacts of non-VHP-covered Program Renewal activities on individual California tiger salamanders, California red-legged frogs, foothill yellow-legged frogs, and their habitat are significant under CEQA due to the rarity of these species in the region. The implementation of Mitigation Measures BIO-6 and BIO-7 would reduce these impacts to a less-than-significant level.

Impact BIO-1K: Impacts on the Northwestern Pond Turtle (Less than Significant with Mitigation)

IMPACT ASSESSMENT

In the Program Renewal Area, all perennial creeks, many intermittent creeks, and most ponds have some potential to support the northwestern pond turtle, which is proposed for listing under FESA. Suitable basking, foraging, and dispersal habitat is present in aquatic habitats throughout the Program Renewal Area, and suitable nesting habitat for pond turtles is present in adjacent upland areas. Figure 3.4-6 shows records of this species from the Program Renewal Area.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on reptiles such as the

northwestern pond turtle, as well as on breeding, basking, foraging, and dispersal habitat for this species. However, the vast majority of Program Renewal activities including projected sediment removal, in-stream vegetation management, and aquatic herbicide application activities would be located on the Valley floor. Pond turtles occur in low densities in much of developed areas on the Valley floor, and they are more commonly found in more natural areas or within the foothills on either side of the Santa Clara Valley. Thus, maintenance activity impacts on this species will be limited because the majority of these activities will occur in portions of the Program Renewal Area where the species is relatively scarce. Vegetation removal activities such as aquatic herbicide application are more likely to affect habitat for this species along perennial streams in these Valley floor areas, especially since young pond turtles will use aquatic vegetation for cover.

Program Renewal activities could affect the survival, reproduction, and/or growth of northwestern pond turtles where they occur in the Program Renewal Area. In addition, the physical presence of people and equipment during maintenance activities can result in adverse effects on individuals due to direct and indirect disturbance. Vegetation management would reduce vegetative cover for pond turtles along streams in the Program Renewal Area. Pond turtle nests present within maintenance activity areas can be crushed by personnel and equipment. Because northwestern pond turtles are so rare that any occurrence of the species in the Program Renewal Area would be significant to its population, any take of individuals that results in a substantial (i.e., population-level) impact would be considered significant under CEQA.

Program Renewal activities will also result in temporary and permanent impacts on breeding, basking, foraging, and dispersal habitat for the northwestern pond turtle in portions of the Program Renewal Area where this species occurs. Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within wetlands, riparian, and upland habitats throughout the Program Renewal Area. Impacts to aquatic (riverine) habitat (114 acres) and vegetated wetlands (444 acres) would directly affect basking, foraging, and dispersal habitat for pond turtles; while impacts within riparian habitats (4,979 acres) and adjacent uplands (5,318 acres), the majority of which would occur to herbaceous riparian vegetation due to mechanical mowing and hand weed abatement, would affect nesting and dispersal habitat. The majority of these impacts are expected to be temporary, as disturbed areas will typically be revegetated following maintenance activities. However, some permanent impacts will occur where activities such as bank stabilization result in modifications to natural areas. Due to the broad scope of the Program Renewal, the extent of habitat impacts would be relatively high compared to regional habitat availability for this species. Thus, impacts of the Program Renewal over the 10-year period could substantially affect regional populations of this species due to temporary and permanent habitat loss. Due to the limited remaining occupied suitable habitat in the region, these impacts would be considered significant under CEQA.

Mitigation activities such as gravel augmentation (Mitigation Measure BIO-3) and installation of instream complexity (Mitigation Measure BIO-4) could also result in impacts to northwestern pond turtle individuals during installation; however, the net effect of these measures on turtles would be beneficial.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize impacts on the northwestern pond turtle and its habitat:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to avoid and minimize times of year when northwestern pond turtles are less likely to be present.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-14: Protection of Northwestern Pond Turtles** requires pre-activity surveys in locations where this species is likely to be encountered, and appropriate protective measures if individuals are found. Individuals may be captured and relocated from the work area by a qualified biologist. As stated in the BMP, these pre-activity surveys and protective measures are not required for VHP-covered activities but may be implemented by Valley Water on a voluntary basis.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of the northwestern pond turtle.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.

- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMPs GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.
- **BMP BANK-2: Concrete Use near Waterways** provides measures to ensure that fresh concrete is isolated until it no longer poses a threat to water quality.

In addition, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on the VHP-covered northwestern pond turtle and its habitat in the Program Renewal Area:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species, including the northwestern pond turtle.
- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

For VHP-covered activities, no species-specific protection measures are provided for the northwestern pond turtle. However, as stated in BMP GEN-14, Valley Water may implement

the species protection measures outlined in this BMP for VHP-covered activities to protect the species on a voluntary basis.

Valley Water would also pay VHP land cover fees and wetland specialty fees to reduce impacts on suitable habitats; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at creeks, wetlands, and surrounding habitats that support the northwestern pond turtle.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With implementation of BMPs, compliance with VHP conditions, and payment of VHP fees, impacts of VHP-covered Program Renewal activities on the northwestern pond turtle and its habitats are less than significant under CEQA, and no mitigation measures are necessary.

For VHP-covered activities, no species-specific protection measures are provided for the northwestern pond turtle. Valley Water may implement the species protection measures outlined in BMP GEN-14 for VHP-covered activities to protect this species on a voluntary basis.

Activities Not Covered under the VHP

Program Renewal activities within tidal portions of the Program Renewal Area have little potential to result in adverse effects on the northwestern pond turtle or its habitat, as this species occurs sparingly within tidal reaches of the Program Renewal Area. For other non-VHP-covered maintenance activities, with the implementation of BMPs, effects of the Program Renewal on the northwestern pond turtle and its habitat would be minimized. However, residual impacts would remain because it would not be feasible to avoid all individuals (particularly nests with eggs) and habitat loss. Although northwestern pond turtles are widespread in the Program Renewal Area, the species is not particularly abundant there. Because individuals of this species can be long-lived, the widespread nature of the species may belie a population that likely would decline substantially in the future because of poor reproduction, as young turtles are seen in relatively few parts of the Program Renewal Area. Therefore, the loss of individuals or of important aquatic or upland habitat could reduce the viability of a population to the extent that it would be extirpated. This impact would be considered significant under CEQA.

Because the northwestern pond turtle is widespread in the Program Renewal Area, implementation of Mitigation Measure BIO-6, which specifies avoidance of impacts of non-VHP-covered Program Renewal activities within areas where a species occurs, is not feasible for the Program Renewal. Therefore, for non-VHP-covered Program Renewal activities, Mitigation Measure BIO-7 (described under Impact BIO-1J above) will be implemented to provide compensatory mitigation for impacts to wetland, aquatic, and riparian habitats. This mitigation may take a variety of forms, but all mitigation for impacts to those habitats could benefit northwestern pond turtle upland or aquatic habitat, directly or indirectly by providing wetland, aquatic, and riparian habitat restoration, enhancement, and protection. These measures would help to maintain water quality, cover, and instream habitat

complexity while protecting upland refugia and nesting habitat. With the implementation of Mitigation Measure BIO-7, non-VHP-covered Program Renewal impacts on northwestern pond turtles are reduced to less than significant levels under CEQA.

SUMMARY AND CONCLUSION

Maintenance activities could affect the northwestern pond turtle and its habitat throughout the Program Renewal Area. Valley Water will implement applicable Program Renewal BMPs to avoid and minimize impacts on this species. In addition, VHP-covered Program Renewal activities will adhere to applicable VHP conditions to avoid and minimize impacts on this species and its habitat (i.e., Conditions 1, 3, 5, and 12), and pay VHP fees based on impacts to land cover types. With the implementation of these measures, VHP-covered Program Renewal impacts on the northwestern pond turtle and its habitat are less than significant under CEQA. However, impacts of non-VHP-covered Program Renewal activities on individuals and habitat for northwestern pond turtles are significant under CEQA due to the rarity of this species in the region. The implementation of Mitigation Measure BIO-7 would reduce these impacts to a less-than-significant level.

Impact BIO-1L: Impacts on the California Horned Lizard, Santa Cruz Black Salamander, and California Giant Salamander (Less than Significant)

The California horned lizard, Santa Cruz black salamander, and California giant salamander, all California species of special concern, are assessed together because these species are uncommon in the Program Renewal Area, especially where maintenance activities will occur; many Program Renewal impacts on these species and their habitats are expected to be similar; and impacts on these species and their habitats are less-than-significant under CEQA without implementation of BMPs, VHP conditions, or mitigation measures.

IMPACT ASSESSMENT

Suitable habitat for the California horned lizard is scarce in the Program Renewal Area, and the species has been recorded in very few locations near projected work areas (Figure 3.4-11). The California horned lizard occurs more commonly east of the Program Renewal Area in the interior of the Diablo Range, and only very sparingly on the fringes of the Program Renewal Area itself. As a result, this species likely would be present only in very low numbers within Program Renewal work areas, if at all. Nevertheless, where suitable habitat is present, small numbers of individuals can breed, forage, and disperse within maintenance activity areas, and may be affected by maintenance activities.

The Santa Cruz black salamander and California giant salamander are known to occur in the Santa Cruz Mountains and foothills within the Program Renewal Area, where limited maintenance activities are projected to occur (Figure 3.4-11). Within these areas, these species are found in moist areas, often under rocks and woody debris or along streams. Program Renewal work areas within this portion of the County provide suitable breeding, foraging, and dispersal habitat for these species.

The vast majority of Program Renewal activities, including projected sediment removal, in-stream vegetation management, and aquatic herbicide application, would be located in areas where California horned lizards, Santa Cruz black salamanders, and California giant salamanders do not occur. As a result, Program Renewal impacts within areas that could support these species would be limited. Table 3.4-5 provides estimates of temporary and

permanent impacts of Program Renewal activities within riparian and upland habitats throughout the Program Renewal Area; however, impacts within suitable habitat for the California horned lizard, Santa Cruz black salamander, and California giant salamander will occur within only a small portion of these areas. Based on estimates for other species that occur more extensively in the Program Renewal Area, it is estimated that less than 5 percent of the impacts identified in Table 3.4-5 could affect habitat for any of these species.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on amphibians and reptiles, as well as breeding, foraging, and dispersal habitat for these species. Program Renewal activities can also affect the survival, reproduction, and/or growth of California horned lizards, Santa Cruz black salamanders, and California giant salamanders where they occur in the Program Renewal Area. In addition, the physical presence of people and equipment during maintenance activities can result in adverse effects on individuals due to direct and indirect disturbance. Mitigation activities such as gravel augmentation (Mitigation Measure BIO-3) and installation of instream complexity (Mitigation Measure BIO-4) could result in adverse effects on amphibian species during installation; however, the addition of instream complexity would result in a net benefit for amphibians that use aquatic habitats.

Vegetation management activities would include the application of herbicides and surfactants. As discussed under "Impacts on Common and Special-Status Fish and Wildlife" above, herbicides and surfactants could result in adverse effects on amphibians such as the Santa Cruz black salamander and California giant salamander, including direct effects on the survival, reproduction, and growth of individuals, as well as indirect effects such as reductions in available prey and habitat modification.

The introduction of nonnative Argentine ants (*Linepithema humile*), the modification of habitats to favor these ants instead of native harvester ants (*Pogonomyrmex californicus*), and the introduction of nonnative or invasive plants that would degrade habitat quality may affect the California horned lizard. However, the likelihood of such impacts would be extremely low because suitable habitat for this species primarily occurs in uplands outside of stream maintenance work sites. Much more limited habitat for this species is present in clearings within riparian areas potentially located within stream maintenance work sites.

Due to the limited number of individual California horned lizards, Santa Cruz black salamanders, and California giant salamanders that would be affected by the Program Renewal, as well as the limited extent of Program Renewal-related habitat impacts that would occur relative to available habitats for these species in the region, Program Renewal activities would not result in any substantial (i.e., population-level) impacts on these species or their habitats. Therefore, Program Renewal impacts on these species and their habitats would be less than significant under CEQA.

Applicable Best Management Practices and VHP Conditions

Valley Water will implement the following BMPs to avoid and minimize impacts on the California horned lizard, Santa Cruz black salamander, and California giant salamander and their habitat in the Program Renewal Area:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to avoid and minimize times of year when special-status amphibians are most likely to be present.
- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when special-status amphibians are less likely to be present and provides measures to ensure that effects of instream herbicide application on aquatic wildlife are minimized.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized dewatering.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of the California horned lizard, Santa Cruz black salamander, and California giant salamander.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.

- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.
- **BMP BANK-2: Concrete Use near Waterways** provides measures to ensure that fresh concrete is isolated until it no longer poses a threat to water quality.
- **BMP ANI-4: Animal Control in Sensitive Amphibian Habitat** will ensure that no harmful fumigants will be used, that fumigants will not be used within special-status amphibian habitat, and that any live traps will have openings to allow special-status amphibians to safely exit.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on the protection of the California horned lizard, Santa Cruz black salamander, and California giant salamander within the Program Renewal Area, as these species are not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). These species are also not expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the California horned lizard, Santa Cruz black salamander, and California giant salamander and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on aquatic habitats:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats for the California horned lizard, Santa Cruz black salamander, and California giant salamander in the Program Renewal Area, including specialty fees for impacts to riparian, stream, and wetland habitats. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved, although the California horned lizard, Santa Cruz black salamander, and California giant salamander are not VHP-covered species and are not proposed for addition to the VHP. Due to the limited distribution of the California horned lizard, Santa Cruz black salamander, and California giant salamander in the Program Renewal Area, the likelihood that maintenance activities will affect individuals of these species or their habitats is relatively low, and any such effects would be extremely limited. As a result, potential VHP-covered Program Renewal impacts on these species and their habitats would be less than significant under CEQA. Implementation of Valley Water BMPs and adherence to VHP conditions would further reduce impacts on the California horned lizard, Santa Cruz black salamander, and/or California giant salamander as well as their habitats within the VHP permit area. No mitigation measures are necessary.

The California horned lizard, Santa Cruz black salamander, and California giant salamander may not be adequately conserved via VHP compliance because populations are not known to occur in VHP preserves. Therefore, it cannot be assumed that compliance with the VHP would necessarily result in conservation of these species that is sufficient to offset any impacts of the Program Renewal. Nevertheless, VHP-covered Program Renewal impacts on these species remain less than significant under CEQA with the implementation of BMPs, as discussed above. No mitigation measures are necessary.

Activities Not Covered under the VHP

Herbicide application, which is not covered by the VHP, could affect Santa Cruz black salamanders and California giant salamanders in the Program Renewal Area. Herbicide use is restricted within the areas shown on Figure 3.4-1 (which includes designated critical habitat for California red-legged frogs and additional habitat areas), and BMP GEN-2 provides a list of restrictions on herbicide use within these areas as well as measures to minimize effects of herbicides on aquatic species and their habitats. Herbicide use would also be subject to Program Renewal requirements, including application only during appropriate wind conditions to minimize the spread of these chemicals to untargeted areas. Thus, with the implementation of BMPs, impacts of herbicide application on Santa Cruz

black salamanders and California giant salamanders would be effectively minimized, and these impacts are less than significant under CEQA. No mitigation measures are necessary.

No maintenance activities within tidal portions of the Program Renewal Area will result in adverse effects on the California horned lizard, Santa Cruz black salamander, or California giant salamander, as these species do not occur within or near tidal reaches of the Program Renewal Area. For other non-VHP-covered maintenance activities, due to the limited distribution of the California horned lizard, Santa Cruz black salamander, and California giant salamander in the Program Renewal Area, the likelihood that maintenance activities will affect individuals of these species or their habitats is relatively low, and any such effects would be extremely limited. As a result, potential non-VHP-covered Program Renewal impacts on these species and their habitats would be less than significant under CEQA. Implementation of Valley Water BMPs would further reduce impacts on the California horned lizard, Santa Cruz black salamander, and/or California giant salamander as well as their habitats within the VHP permit area. Riparian habitat mitigation provided under Mitigation Measure BIO-12 would benefit the Santa Cruz black salamander and California giant salamander, should it occur within the range of these species.

SUMMARY AND CONCLUSION

Maintenance activities could affect the California horned lizard, Santa Cruz black salamander, California giant salamander, and their habitat within portions of the Program Renewal Area where these species occur (Figure 3.4-11). Due to the limited number of individual California horned lizards, Santa Cruz black salamanders, and California giant salamanders that would be affected by the Program Renewal, as well as the limited extent of Program Renewal-related habitat impacts that would occur relative to available habitats for these species in the region, Program Renewal activities would not result in any substantial (i.e., population-level) impacts on these species or their habitats. Therefore, VHP-covered and non-VHP-covered Program Renewal impacts on these species and their habitats would be less than significant under CEQA. Implementation of BMPs and compliance with VHP conditions would effectively minimize Program Renewal impacts on individual California horned lizards, Santa Cruz black salamanders, and California giant salamanders and their habitats. No mitigation measures are necessary.

Impact BIO-1M: Impacts on Nonbreeding Special-Status Birds (Less than Significant)

The Program Renewal will include activities in or near habitats that could be used by the following nonbreeding special-status birds: the state and federally endangered California condor and California least tern; the state threatened bank swallow; and the redhead, black skimmer, least bittern, short-eared owl, and purple martin, which are California species of special concern. These species are assessed together because they are uncommon in the Program Renewal Area, especially where maintenance activities will occur; Program Renewal impacts on these species and their habitats are expected to be similar; and impacts of the Program Renewal on these species are less than significant under CEQA without implementation of BMPs, VHP conditions, or mitigation measures.

IMPACT ASSESSMENT

The California condor does not nest in Santa Clara County. Since 2011, condors have occasionally ventured into Santa Clara County, typically being seen flying high over the Diablo Range (and occasionally other areas). However, to date, condors have not been

recorded on the ground below the 1,000-foot contour (Ventana Wildlife Society 2015). If condors occur in the Program Renewal Area at all, now or in the future, they would occur as foragers in extensive grasslands or agricultural areas where carrion is available, and likely would occur at higher elevations than where Program Renewal activities would occur. Due to the species' limited distribution and extremely low probability of occurrence in the Program Renewal Area, potential impacts of maintenance activities on the California condor are not expected to occur.

The California least tern does not nest in the Program Renewal Area. This species uses managed pond habitats along the edge of the San Francisco Bay, and the Bay itself, as post-breeding foraging and staging areas. However, no Program Renewal activities that would adversely affect the use of these habitats by post-breeding least terns would occur; any such activities would occur at the margins of ponds, and thus would not impact habitat used by these species or preclude the use of ponds for foraging or interior islands/levees for roosting. Due to the species' limited distribution in the Program Renewal Area and the limited potential for Program Renewal activities to affect roosting or foraging individuals, the potential for maintenance activities to impact the California least tern is very low.

The bank swallow forages aerially over habitats throughout the Program Renewal Area rarely, occurring only as a scarce transient during migration. Individuals are most likely to forage over aquatic habitats where high numbers of aerial insects are present. Due to the species' limited and infrequent occurrence in maintenance activity areas, as well as its limited use of the Program Renewal Area only for foraging during migration, maintenance activity impacts on bank swallows would be very low.

The redhead has been recorded nesting in the Program Renewal Area on only a few occasions in managed ponds and wetlands such as the Palo Alto Flood Control Basin and Pond A16 at the Don Edwards National Wildlife Refuge. Redheads are not expected to nest in baylands habitats in or very close to Program Renewal work areas and thus would not be impacted by Program Renewal activities.

The short-eared owl is a migrant and winter visitor that has historically bred only very locally and sporadically in the South Bay. It is unlikely that this species currently breeds in the Program Renewal Area. If it still breeds in the area, the Palo Alto Flood Control Basin is the only likely nesting area for the species. Any maintenance activities in the vicinity of the Flood Control Basin most often would occur along its periphery, whereas short-eared owls would nest toward the interior of the Flood Control Basin. Thus, Program Renewal activities are unlikely to affect an active nest of this species. Maintenance activities are unlikely to disturb roosting or foraging short-eared owls, as individuals are not likely to occur close enough to maintenance activity areas during the daytime such that disturbance of individuals would occur.

The least bittern has historically been a rare nonbreeding visitor to the Program Renewal Area, but a pair was documented nesting at Calero Reservoir in 2022. No suitable nesting habitat for this species is present within or adjacent to maintenance activity areas, and the species will occur in these areas only as an occasional migrant, foraging in freshwater and brackish marshes. Due to the species' limited and infrequent occurrence in maintenance activity areas, as well as its limited use of the Program Renewal Area only for foraging, maintenance activity impacts on least bitterns would be very low.

The black skimmer occurs in small numbers within saline-managed pond habitats in the northernmost portion of the Program Renewal Area. This species nests on small islands within managed ponds; this nesting habitat is ephemeral, and thus is not mapped. However, no suitable nesting habitat is present within or adjacent to Program Renewal activity areas, which occur only along the margins of ponds used by this species. Individual black skimmers can occasionally roost or forage in small numbers along tidal portions of Program Renewal Area streams that are adjacent to managed ponds, but they are not expected to make regular use of these areas. Due to the species' limited use of maintenance activity areas for roosting and foraging, Program Renewal impacts on least bitterns would be limited and unlikely.

The purple martin nests outside of the Program Renewal Area above 1,000 feet in elevation in the Santa Cruz Mountains. Although nesting is possible at lower elevations within the Program Renewal Area, the species is not expected to nest within or adjacent to maintenance activity work areas. Individuals typically occur in the Program Renewal Area as scarce migrants, but pairs that nest at higher elevations in Santa Clara County are often observed foraging within the Program Renewal Area, such as at Calero Reservoir, during the nesting season. Due to the species' limited use of the Program Renewal Area for foraging, maintenance activity impacts on purple martins would be limited and unlikely.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on nonbreeding birds in the Program Renewal Area, as well as suitable roosting and foraging habitat. However, because California condors, California least terns, bank swallows, redheads, least bitterns, short-eared owls, black skimmers, and purple martins do not nest within or close enough to maintenance activity areas to be affected by those activities, and individuals spend limited time within and/or adjacent to these areas, Program Renewal activities would have no effects on the survival, reproduction, and/or growth of these species in the Program Renewal Area. Rather, the potential for effects on these species resulting from Program Renewal activities would pertain primarily to the physical presence of people and equipment during maintenance activities, which may result in the indirect disturbance of roosting or foraging individuals.

In addition, maintenance activities would result in the temporary and permanent loss and/or modification of a very limited area of roosting and foraging habitat for these species. Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within habitats throughout the Program Renewal Area that potentially support these species. However, because the California condor, California least tern, bank swallow, redhead, least bittern, short-eared owl, black skimmer, and purple martin make only very limited use of these habitats in the Program Renewal Area, only a fraction of Program Renewal impacts estimated in Table 3.4-5 would affect these species. Mercury mobilization and resulting bioconcentration of mercury in fish consumed by California least terns, redheads, least bitterns, and black skimmers could also have a risk of impacting the health of these species. However, Program Renewal activities would increase mercury levels only incrementally in prey that are consumed by these species.

Due to the limited number of individual California condors, California least terns, bank swallows, redheads, least bitterns, short-eared owls, black skimmers, and purple martins that occur in the vicinity of Program Renewal activities, as well as the limited extent of Program Renewal-related habitat impacts that would occur relative to available habitats for

these species in the region, Program Renewal impacts on these species and their habitats would be less than significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to reduce impacts on the California condor, California least tern, bank swallow, redhead, least bittern, short-eared owl, black skimmer, and purple martin and their habitat in the Program Renewal Area:

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** will minimize the exposure of soils containing mercury in portions of the Guadalupe River watershed affected by historic mercury mining.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions protect the California least tern, bank swallow, redhead, least bittern, short-eared owl, black skimmer, and purple martin within the Program Renewal Area, as these species are not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). These species are also not expected to be covered under the VHP in the future. Nevertheless, VHP-covered Program Renewal activities will comply with the following condition to avoid and minimize impacts on the California condor:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on fully protected species, including the California condor.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. Payment of land cover fees is expected to provide some limited benefit (due to the species' limited use of habitats in the Program Renewal Area in general) to the California condor, bank swallow, and purple martin, for which existing Habitat Agency reserves provide some suitable foraging habitat. As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP, the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly

"covered species" under the VHP. This conclusion is supported based on the potential suitability of reserve habitat for foraging California condors, bank swallows, and purple martins. Because these reserves do not include tidal habitats or extensive marshes, the payment of VHP fees would not benefit the California least tern, black skimmer, or least bittern.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved, although the California condor, California least tern, bank swallow, redhead, least bittern, short-eared owl, black skimmer, and purple martin are not VHP-covered species and are not proposed for addition to the VHP. Due to the limited occurrence of the California condor, California least tern, bank swallow, redhead, least bittern, short-eared owl, black skimmer, and purple martin in the Program Renewal Area, the likelihood that maintenance activities will affect individuals of these species is extremely low. As a result, potential VHP-covered Program Renewal impacts on these species would be less than significant under CEQA, and no mitigation measures are necessary.

Limited temporary and permanent impacts of the Program Renewal on suitable roosting and foraging habitat for the California condor, California least tern, bank swallow, redhead, least bittern, short-eared owl, black skimmer, and purple martin, and the indirect disturbance of roosting and foraging nonbreeding individuals by maintenance personnel and equipment, would also potentially occur. Due to the very limited anticipated effects of VHP-covered Program Renewal activities on habitat and individuals of these species, these impacts would be less than significant under CEQA, and no mitigation measures are necessary.

With the implementation of Program Renewal BMPs, impacts of VHP-covered Program Renewal activities on habitat for California condors, California least terns, bank swallows, redheads, least bitterns, short-eared owls, black skimmers, and purple martins would be effectively avoided and minimized. Payment of VHP fees would further reduce impacts on habitat for the California condor, bank swallow, and purple martin. No mitigation measures are necessary.

Activities Not Covered under the VHP

Due to the limited occurrence of the California condor, California least tern, bank swallow, least bittern, black skimmer, purple martin, in the Program Renewal Area, the likelihood that maintenance activities will affect individuals of these species is extremely low. As a result, potential non-VHP-covered Program Renewal impacts on these species would be less than significant under CEQA, and no mitigation measures are necessary.

Limited temporary and permanent impacts of the Program Renewal on suitable roosting and foraging habitat for the California condor, California least tern, bank swallow, least bittern, black skimmer, purple martin, and the indirect disturbance of roosting and foraging nonbreeding individuals by maintenance personnel and equipment, would also potentially occur. Due to the limited anticipated effects of non-VHP-covered Program Renewal activities on habitat for these species, these impacts would be less than significant under CEQA, and no mitigation measures are necessary.

With the implementation of Program Renewal BMPs, impacts of non-VHP-covered Program Renewal activities on individual the California condor, California least tern, bank swallow, least bittern, black skimmer, purple martin, and their habitats would be effectively avoided and minimized. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

Due to the very limited potential for Program Renewal activities to affect California condors, California least terns, bank swallows, least bitterns, black skimmers, and purple martins that would be affected by the Program Renewal, as well as the limited extent of Program Renewal-related habitat impacts that would occur relative to available habitats for these species in the region, Program Renewal activities would not result in any substantial (i.e., population-level) impacts on these species or their habitats. Therefore, VHP-covered and non-VHP-covered Program Renewal impacts on these species and their habitats would be less than significant under CEQA. Implementation of BMPs would effectively minimize VHP-covered and Program Renewal non-VHP-covered impacts on habitats for these species, and payment of VHP fees would further reduce VHP-covered impacts on habitat for the California condor, bank swallow, least bittern, and purple martin. No mitigation measures are necessary.

Impact BIO-1N: Impacts on Certain Nesting Special-Status Birds (Less than Significant)

The Program Renewal could result in impacts on several special-status birds that nest in the Program Renewal Area, including the Bryant's savannah sparrow, a California species of special concern year-round; the northern harrier, Vaux's swift, olive-sided flycatcher, and grasshopper sparrow, which are California species of special concern when nesting; and the white-tailed kite, a state fully protected species. These special-status bird species are assessed together because Program Renewal impacts on these species will be similar, and these impacts are less-than-significant under CEQA without implementation of BMPs, VHP conditions, or mitigation measures, as discussed in detail below.

IMPACT ASSESSMENT

The Bryant's savannah sparrow nests in the Program Renewal Area in tidal salt marsh, brackish marsh, diked salt marsh, and muted salt marsh habitats along the edges of the Bay; in ruderal grasslands adjacent to these habitats; and (in very limited numbers) farther inland in the Program Renewal Area in grasslands. Individuals will forage in grassland and marsh habitats throughout the Program Renewal Area year-round. However, because only limited Program Renewal activities are projected to occur within tidal and brackish marsh habitats, and the abundance of Bryant's savannah sparrows nesting on levees (as opposed to high-marsh areas) is fairly low, the number of nesting, roosting, or foraging savannah sparrows that could be impacted by maintenance activities would be low relative to regional populations.

In the Program Renewal Area, breeding grasshopper sparrows occur in grasslands in several areas in the foothills of the Santa Cruz Mountains, along the foothills of the Diablo Range from Calaveras Reservoir southeast to the hills above Pacheco Creek, and in the southeast portion of the Program Renewal Area where the hills drop down to the Pajaro River Valley (Heller 2007). They do not breed on the Valley floor, and little overlap (if any) exists between suitable grasshopper sparrow habitat and potential maintenance activities. As a result, very

few, if any, nesting, roosting, or foraging grasshopper sparrows would be adversely affected by Program Renewal activities, and only limited areas of suitable habitat may be affected.

In the northern portion of the Program Renewal Area, northern harriers nest in South Bay marshes, particularly in the interiors of larger tidal salt and brackish marshes. In the southern portion of the Program Renewal Area, northern harriers nest within and adjacent to large areas of open grassland, fallow agricultural fields, and impoundments at the South County Regional Wastewater Authority Plant. Maintenance activities are not proposed within marsh habitats and are unlikely to disturb an active northern harrier nest located in the interior of such habitats. Similarly, maintenance activities may occur along the margins of suitable nesting habitat in the southern portion of the Program Renewal Area (e.g., along lower Llagas Creek), and the potential for such activities to disturb a nest to the point of abandonment would be very low because harriers nest in the interiors of large expanses of open habitat, not very close to levees where Program Renewal activities would be concentrated. Because northern harriers forage widely in open areas near their preferred habitats, maintenance activities could disturb small numbers of roosting and foraging individuals that may be present within and adjacent to work areas.

The white-tailed kite nests primarily in open grassland, shrubland, and agricultural habitats that contain suitable bushes, shrubs, or trees for nesting, and active nests of this species may be present in natural lands, agricultural areas, riparian areas, and parks, as well as in urban areas located near open habitats that provide foraging opportunities. Maintenance activities can result in direct and indirect effects on active nests of this species; however, due to their low nesting density in the Program Renewal Area, only small numbers of nesting white-tailed kites would be affected. Roosting and foraging white-tailed kites, which occur more widely and may be present within and adjacent to work areas throughout the Program Renewal Area (especially near larger open habitats), may also be disturbed by maintenance activities.

Within the Program Renewal Area, the Vaux's swift nests in small numbers in residential chimneys in Los Gatos, Los Altos, Los Altos Hills, Cupertino, and Campbell, as well as in snags at higher elevations in the Santa Cruz Mountains. Where nests are located in residential areas on or near the Valley floor (where most maintenance activities will occur), they are expected to be far enough from maintenance activities such that Program Renewal impacts on an active nest are unlikely. Where nests are located in snags in the Santa Cruz Mountains, maintenance activity impacts on nesting pairs of this species are expected to be limited due to the small number of birds nesting in the Program Renewal Area as well as the limited extent of maintenance activities in these mountains. Thus, Program Renewal activities are unlikely to impact an active nest of this species. Program Renewal activities could affect small numbers of individuals that forage aerially over maintenance work areas during summer and migration.

Olive-sided flycatchers are associated with coniferous forest habitats. They breed widely in the Santa Cruz Mountains and more sparingly in the Diablo Range, but do not breed on the Santa Clara Valley floor, and relatively few pairs nest at sites below 1,000 feet in elevation. Olive-sided flycatchers are known to nest along Upper Penitencia Creek in Alum Rock Park, and occasionally around Calero Reservoir in the Program Renewal Area (Bousman 2007b). Suitable nesting habitat also is present in the Program Renewal Area along the uppermost reaches of Uvas Creek and Bodfish Creek. Because limited maintenance activities will occur in portions of the Program Renewal Area where this species is known to nest, Program

Renewal impacts on active olive-sided flycatcher nests are expected to be limited. Program Renewal activities can also affect small numbers of roosting and foraging individuals that may be present in work areas during summer and migration.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on birds in the Program Renewal Area due to direct and indirect disturbance and temporary or permanent impacts on suitable habitat. In addition, in the absence of BMPs, individuals of these species (especially eggs or young in nests) could be killed or injured during maintenance activities due to crushing by construction personnel or equipment. Activities causing a substantial increase in noise or visual disturbance near active nest locations may result in nest abandonment, and possibly the loss of eggs or young as a result. Such activities may also disturb roosting and foraging individuals, which would likely move out of the area. However, relatively limited numbers of Bryant's savannah sparrows, northern harriers, Vaux's swifts, olive-sided flycatchers, grasshopper sparrows, and white-tailed kites would be affected relative to their regional populations, and this impact would be less than significant under CEQA.

In addition, maintenance activities would result in the temporary and permanent loss and/or modification of a very limited area of nesting and foraging habitat for these species. Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within habitats throughout the Program Renewal Area that potentially support these species. However, because the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite make only very limited use of these habitats in the Program Renewal Area, only a fraction of Program Renewal impacts estimated in Table 3.4-5 would affect these species. Of the impacts listed in Table 3.4-5, impacts within vegetated wetlands could affect nesting and foraging habitat for the Bryant's savannah sparrow and redhead; impacts within herbaceous streambank habitats could affect nesting and foraging habitat for the Bryant's savannah sparrow and redhead; impacts within woody riparian habitats could affect nesting habitat for the white-tailed kite, Vaux's swift, and olive-sided flycatcher; and impacts within non-developed uplands could affect nesting and foraging habitat for the grasshopper sparrow, white-tailed kite, Vaux's swift, and olive-sided flycatcher, where these species occur in the Program Renewal Area.

The greatest potential for Program Renewal maintenance activities to affect Bryant's savannah sparrows is likely related to maintenance of ruderal vegetation along levees adjacent to tidal and brackish marshes, where Bryant's savannah sparrows could nest. In addition, Bryant's savannah sparrows use vegetation along the toe of the levee slope for cover, especially during very high winter tides that inundate the rest of the marsh plain. As a result, vegetation management along these levees would reduce cover for foraging and nonbreeding individuals during high winter tides. Thus, impacts of the Program Renewal on individual Bryant's savannah sparrow and their habitat would be limited. Further, vegetation management along levees may benefit Bryant's savannah sparrows by helping to maintain vegetation at an appropriate density to support suitable nesting habitat. If vegetation management were to cease, vegetation along the levees would increase in height and density to the point where it no longer would provide suitable nesting habitat. In addition, the management of invasive vegetation would benefit nesting savannah sparrows.

Herbicides used for vegetation management may deplete invertebrate prey for these species. Program Renewal activities, particularly vegetation management, may degrade habitat for these species, and may maintain habitat in a reduced-quality state so that it supports fewer individuals and/or nesting pairs over the long term. The introduction of nonnative vegetation would degrade suitable habitat for special-status bird species. Small mammal control may reduce the suitability of habitat for white-tailed kites, northern harriers, and by reducing available prey. Although maintenance activities will potentially benefit Bryant's savannah sparrows, as discussed above, these activities would reduce the quality of nesting and/or foraging habitat for other species due to the removal of trees and other vegetation, modification and disturbance of habitat. However, because of the relatively small amount of habitat for the northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite that would be affected by the Program Renewal relative to the extent of available habitat in the region, as well as anticipated benefits of maintenance activities to suitable habitat for the Bryant's savannah sparrow, impacts on habitat for these species would be very limited, and would be considered less than significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMP to reduce impacts on the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite:

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** will minimize the exposure of soils containing mercury in portions of the Guadalupe River watershed affected by historic mercury mining.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and appropriate protective measures for nesting birds.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions currently protect the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, or their habitat in the Program Renewal Area, as these species are not currently covered under the VHP or listed as fully protected such that VHP Condition 1 would apply. Nevertheless, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on the white-tailed kite:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on fully protected species, including the white-tailed kite.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. The Program Renewal's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit the grasshopper sparrow, and white-tailed kite, which are widespread in the Program Renewal Area and expected to occur in existing Habitat Agency reserves. The payment of VHP land cover fees is expected to have no benefit to the Bryant's savannah sparrow, northern harrier, Vaux's swift, and olive-sided flycatcher, which are unlikely to make substantive use of Habitat Agency reserves. As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly "covered species" under the VHP. This conclusion is supported based on the relatively wide distribution of the grasshopper sparrow, and white-tailed kite in Santa Clara County.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. Due to the limited occurrence of the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite in the Program Renewal Area, the likelihood that maintenance activities will affect individuals of these species is relatively low. As a result, potential VHP-covered Program Renewal impacts on these species would be less than significant under CEQA, and no mitigation measures are necessary.

Limited temporary and permanent impacts of the Program Renewal on suitable nesting, roosting, and foraging habitat for the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite, and the indirect disturbance of nesting, roosting, and foraging nonbreeding individuals by maintenance personnel and equipment, would also potentially occur. Due to the limited anticipated effects of VHP-covered Program Renewal activities on individuals of and habitat for these species, these impacts would be less than significant under CEQA, and no mitigation measures are necessary.

With the implementation of Program Renewal BMPs, impacts of VHP-covered Program Renewal activities on nesting Bryant's savannah sparrows, northern harriers, Vaux's swifts, olive-sided flycatchers, grasshopper sparrows, and white-tailed kites and their habitats would be effectively avoided and minimized. In addition, payment of VHP fees would further reduce impacts on habitat for the grasshopper sparrow, and white-tailed kite. No mitigation measures are necessary.

Activities Not Covered under the VHP

Due to the limited occurrence of the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite, in the Program Renewal Area, the likelihood that maintenance activities will affect individuals of these species is relatively low. As a result, potential non-VHP-covered Program Renewal impacts on these species would be less than significant under CEQA.

Limited temporary and permanent impacts of the Program Renewal on suitable roosting and foraging habitat for the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite, and the indirect disturbance of roosting and foraging nonbreeding individuals by maintenance personnel and equipment, would also potentially occur. Due to the limited anticipated effects of non-VHP-covered Program Renewal activities on habitat for and individuals of these species, these impacts would be less than significant under CEQA. No mitigation measures are necessary.

With the implementation of Program Renewal BMPs, impacts of non-VHP-covered Program Renewal activities on habitat for the Bryant's savannah sparrow, northern harrier, Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and white-tailed kite would be effectively avoided and minimized. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

Due to the limited number of individual Bryant's savannah sparrows, northern harriers, Vaux's swifts, olive-sided flycatchers, grasshopper sparrows, and white-tailed kites that would be affected by the Program Renewal, as well as the limited extent of Program Renewal-related habitat impacts that would occur relative to available habitats for these species in the region, Program Renewal activities would not result in any substantial (i.e., population-level) impacts on these species or their habitats. Therefore, VHP-covered and non-VHP-covered Program Renewal impacts on these species and their habitats would be less than significant under CEQA. Implementation of BMPs would effectively minimize VHP-covered and non-VHP-covered impacts on nesting individuals as well as habitats for these species, and payment of VHP fees would further reduce VHP-covered impacts on habitat for the grasshopper sparrow and white-tailed kite. No mitigation measures are necessary.

Impact BIO-1O: Impacts on the California Ridgway's Rail, California Black Rail, Salt Marsh Harvest Mouse, Salt Marsh Wandering Shrew, and Alameda Song Sparrow (Less than Significant with Mitigation)

The California Ridgway's rail and salt marsh harvest mouse, which are state and federally endangered and fully protected species; the California black rail, which is state threatened and a fully protected species; and the Alameda song sparrow and salt marsh wandering shrew, which are California species of special concern, are assessed together because they

occur in sensitive marsh habitats in the Program Renewal Area. The Program Renewal will avoid the loss of individuals of these species through the implementation of BMPs, and residual Program Renewal impacts on marsh habitats for these species are considered significant under CEQA and require mitigation.

IMPACT ASSESSMENT

Figure 3.4-7 depicts the locations of suitable California Ridgway's rail and California black rail nesting habitat, as well as suitable habitat for the salt marsh harvest mouse and salt marsh wandering shrew, in the Program Renewal Area within 1 mile of projected maintenance activities. Figure 3.4-13 depicts the upstream extent of suitable nesting habitat for the Alameda song sparrow along streams in the Program Renewal Area. This mapping is based on known occurrences of these species and characteristics (such as plant species composition and marsh width) of marsh habitats. Suitable nesting habitat for the Alameda song sparrow extends farther upstream compared to nesting habitat for Ridgway's rails and black rails because this species will nest in narrower strips of marsh vegetation along channels, whereas rails require much more extensive marsh habitat for breeding.

California Ridgway's rails and California black rails nest in South Bay marshes, particularly in the interiors of larger tidal and brackish marshes. While maintenance activities will occur along tidal channels in the Program Renewal Area within suitable nesting habitat for these species, these channels are located on the peripheries of marsh habitats in which these species nest. Thus, direct impacts on an active nest of California Ridgway's rails or California black rails are not expected to occur as a result of maintenance activities. However, Program Renewal activities could result in the indirect disturbance of nesting rails, as these species can be highly sensitive to disturbance. In addition, breeding and nonbreeding Ridgway's rails and black rails forage year-round within tidal habitats along the lowermost reaches of Program Renewal Area channels (Figure 3.4-7). Ridgway's rails also occasionally wander farther upstream along tidal sloughs from their typical salt marsh habitats into tidal brackish/freshwater marsh habitats, but they are expected to do so only very rarely. A single black rail has also been detected in freshwater marsh habitat at Rancho San Antonio. Thus, maintenance activities may also result in the indirect disturbance of foraging individuals of these species in areas where they occur.

Maintenance activities (aquatic herbicide application, in-stream vegetation management, and sediment removal) are projected close enough to nesting habitat for both Ridgway's rails and black rails to result in indirect effects on active nests of these species, and/or the indirect disturbance of roosting and foraging individuals, along the lower reaches of San Francisquito Creek, Permanente Creek, the Sunnyvale West Channel, and the Coyote Bypass (Figure 3.4-7). In addition, maintenance activities (aquatic herbicide application, in-stream vegetation management, sediment removal, and hand weed abatement) are projected close enough to nesting habitat for black rails and foraging habitat to Ridgway's rails to result in indirect effects on active nests of black rails and/or foraging and roosting individual Ridgway's rails and black rails along the lower reaches of Matadero Creek, Adobe Creek, Stevens Creek, the Guadalupe River, and Coyote Creek (Figure 3.4-7). Unprojected maintenance activities can also occur within and adjacent to suitable habitats for these species.

The salt marsh harvest mouse and salt marsh wandering shrew are similarly associated with tidal marsh habitat along the lower reaches of tidal channels in the northern portion of the

Program Renewal Area. Habitat for these species consists of pickleweed-dominated tidal marshes as well as diked and muted tidal marshes. Salt marsh harvest mice also have been found in dense vegetation within brackish marshes in the South Bay (H. T. Harvey & Associates 2007). Individuals may be present in low numbers throughout these habitats, including within maintenance activity areas. Maintenance activities (aquatic herbicide application, in-stream vegetation management, and sediment removal) are projected to occur within or immediately adjacent to suitable marsh habitat for these species along the lower reaches of San Francisquito Creek, Adobe Creek, Permanente Creek, Stevens Creek, the Sunnyvale West Channel, the Guadalupe River, and the Coyote Bypass (Figure 3.4-10).

The Alameda song sparrow nests in salt marsh habitats, as well as in taller vegetation along tidal sloughs in the South Bay. Because this species nests and forages in wetland and riparian habitats along tidal channels where maintenance activities will occur, maintenance activities could result in direct effects on active nests of this species, as well as the indirect disturbance of nesting birds. Nonbreeding individuals foraging along channels may also be disturbed by maintenance activities year-round. Maintenance activities (sediment removal, in-stream vegetation management, aquatic herbicide application, sediment deposition) are projected to occur along the lower reaches of all streams within the Program Renewal Area that enter the San Francisco Bay (Figure 3.4-13).

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on birds in the Program Renewal Area due to direct and indirect disturbance and temporary or permanent impacts on suitable habitat. In addition, individuals of these species (especially eggs or young in Alameda song sparrow nests) may be killed or injured during maintenance activities due to crushing by construction personnel or equipment. Activities causing a substantial increase in noise or visual disturbance near active Ridgway's rail, black rail, and/or Alameda song sparrow nest locations may result in nest abandonment, and possibly the loss of eggs or young as a result. Such activities may also disturb roosting and foraging individuals, which would likely move out of the area.

The mortality of Ridgway's rails and black rails is greatest during the winter, primarily due to predation of individuals during extreme winter high tides that force rails out of dense marsh vegetation into more open areas in transitional zones and high marsh areas located along the periphery of tidal marshes (Eddleman 1989, Albertson 1995). Human-related disturbance may increase rails' vulnerability to predators during these high tide events due to flushing, the attraction of predators, and/or the prevention of rails from seeking cover in suitable habitat areas (Evens and Page 1983, Evens and Page 1986). In addition, removal of vegetation from the sides of levees adjacent to Ridgway's rail and black rail habitat, particularly from lower portions of banks and benches, would reduce the amount of vegetative cover that may be used to conceal individuals from predators during high tides, especially during the winter. Thus, vegetation management activities that would temporarily remove this habitat (e.g., herbicide application and manual vegetation removal) would result in an adverse impact on these species.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in the injury or mortality of salt marsh harvest mice and salt marsh wandering shrews because of equipment use, vehicle traffic, and worker foot traffic. Individuals that vacate the area because of increased levels of noise and disturbance may be exposed to increased competition from conspecifics already occupying the area to

which they were displaced, and/or increased predation due to unfamiliarity with the new area or lack of sufficient cover. Removal of vegetation may also expose individual mice and shrews to predation.

Similar to habitat for Ridgway's rails and black rails discussed above, upland transitional habitat surrounding marshes provides upland refugia for salt marsh harvest mice and salt marsh wandering shrews during winter high tides that is of particular importance to these species. Thus, vegetation management activities that would temporarily remove this habitat (e.g., herbicide application and manual vegetation removal) would result in an adverse impact on these species.

Due to the sensitivity of the California Ridgway's rail, California black rail, salt marsh harvest mouse, and salt marsh wandering shrew and their limited population sizes in the Program Renewal Area, the loss of any individuals of these species due to maintenance activities such that a substantial (i.e., population-level) effect occurs would be considered significant under CEQA. Due to the potential for maintenance activities to result in the loss of relatively large numbers of Alameda song sparrows relative to their regional populations, impacts of maintenance activities on individuals of this species such that a substantial (i.e., population-level) effect would occur would also be considered significant under CEQA.

Maintenance activities also could remove or modify relatively narrow areas of suitable nesting and foraging habitat for Ridgway's rails and black rails; similarly narrow areas of suitable habitat for salt marsh harvest mice and wandering shrews; and high-tide refugial habitat for Ridgway's rails, black rails, salt marsh harvest mice, and salt marsh wandering shrews. In addition, these activities could remove or modify a substantial area of nesting and foraging habitat for Alameda song sparrows, which nest and forage along Program Renewal Area channels. Unlike common yellowthroats (discussed separately under Impact BIO-1P below), maintenance activities are not expected to enhance habitat for Alameda song sparrows, which nest primarily in marsh vegetation. Rather, maintenance activities could degrade or remove marsh habitat within the Program Renewal Area. The introduction of nonnative vegetation would also degrade suitable marsh habitat for special-status bird species, especially in sensitive tidal and brackish marsh habitats.

The total estimated acreages of Program Renewal impacts within suitable habitat for the California Ridgway's rail, California black rail, salt marsh harvest mouse, salt marsh wandering shrew, and Alameda song sparrow are provided in Table 3.4-14. Of these, impacts to vegetated wetlands (11.0 acres for the California Ridgway's rail and California black rail, 2.7 acres for the salt marsh harvest mouse and salt marsh wandering shrew, and 21.6 acres for the Alameda song sparrow), herbaceous streambank vegetation (5.4 acres for the California Ridgway's rail and California black rail, 2.2 acres for the salt marsh harvest mouse and salt marsh wandering shrew, and 61.9 acres for the Alameda song sparrow), and woody riparian vegetation (2.1 acres for the California Ridgway's rail and California black rail, 0.5 acre for the salt marsh harvest mouse and salt marsh wandering shrew, and 4.2 acres for the Alameda song sparrow) could affect habitat for the salt marsh harvest mouse and salt marsh wandering shrew; foraging habitat and high-tide refugial habitat for the California Ridgway's rail and California black rail; and nesting and foraging habitat for the Alameda song sparrow. Impacts within aquatic (riverine) habitats and non-developed uplands are not expected to substantially affect these species, which do not make substantial use of upland areas outside of stream channels. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these

habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Table 3.4-14. Estimated 2027-2036 Total[1] Program Renewal Impacts to Habitats for California Ridgway's Rails, California Black Rails, Salt Marsh Harvest Mice, Salt Marsh Wandering Shrews, and Alameda Song Sparrows[4]

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
California Ridgway's Rail and California Black Rail							
Vegetated Wetlands (Tidal Salt Marsh and Tidal Brackish Marsh)	1.2	8.1	1.7	0.0	0.0	0.0	11.0
Aquatic Habitat (Tidal and Intertidal)	4.8	0.0	0.0	0.0	0.0	0.0	4.8
Herbaceous Streambank (California Annual Grassland)	0.0	4.5	0.1	0.0	0.1	0.7	5.4
Woody Riparian (Riparian Forest and Scrub)	0.0	0.7	1.3	0.1	0.0	0.0	2.1
Other (Non-Developed Uplands)[3]	0.0	0.0	0.1	0.0	0.1	0.7	0.9
Total	**6.0**	**13.3**	**3.3**	**0.1**	**0.2**	**1.4**	**24.3**
Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew							
Vegetated Wetlands (Tidal Salt Marsh and Tidal Brackish Marsh)	0.3	2.0	0.4	0.0	0.0	0.0	2.7
Aquatic Habitat (Tidal and Intertidal)	1.2	0.0	0.0	0.0	0.0	0.0	1.2
Herbaceous Streambank (California Annual Grassland)	0.0	1.1	0.0	0.0	1.0	0.1	2.2
Woody Riparian (Riparian Forest and Scrub)	0.0	0.2	0.3	0.0	0.0	0.0	0.5

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Other (Non-Developed Uplands)[3]	0.0	0.0	0.0	0.0	1.2	0.1	1.3
Total	**1.5**	**3.3**	**0.8**	**0.0**	**2.1**	**0.3**	**7.9**

Alameda Song Sparrow

Vegetated Wetlands (Tidal Salt Marsh and Tidal Brackish Marsh)	2.1	16.1	3.4	0.0	0.0	0.0	21.6
Aquatic Habitat (Tidal and Intertidal)	8.3	0.0	0.0	0.0	0.0	0.0	8.3
Herbaceous Streambank (California Annual Grassland)	0.0	9.0	0.2	0.0	27.5	25.2	61.9
Woody Riparian (Riparian Forest and Scrub)	0.0	1.4	2.6	0.2	0.0	0.0	4.2
Other (Non-Developed Uplands)[3]	0.0	0.0	0.2	0.0	33.5	24.3	58.0
Total	**10.4**	**26.5**	**6.4**	**0.2**	**61.0**	**49.5**	**154.1**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided.

[2] All impacts of sediment removal and aquatic herbicide application are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] Grasslands, oak woodlands, and non-developed irrigated agriculture.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

Due to extensive loss of suitable marsh and refugial habitats to support the California Ridgway's rail, California black rail, salt marsh harvest mouse, and salt marsh wandering shrew that has occurred in the San Francisco Bay, populations of these species in the Program Renewal Area are very limited. Therefore, the effects of even temporary habitat loss, or the loss of narrow areas of habitat along Program Renewal Area channels, could substantially affect regional populations of these species because their populations and available habitat are extremely limited locally and regionally. Such impacts would be considered significant under CEQA. Because maintenance activities also could affect relatively large areas of suitable nesting habitat for Alameda song sparrows, these effects would also be considered significant under CEQA due to the potential for such impacts to affect regional populations.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to reduce impacts on the California Ridgway's rail, California black rail, Alameda song sparrow, salt marsh harvest mouse, and salt marsh wandering shrew:

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** will minimize the exposure of soils containing mercury in portions of the Guadalupe River watershed affected by historic mercury mining.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-6.1: Protection of Alameda Song Sparrow and San Francisco Common Yellowthroat** provides additional measures to ensure the protection of active nests of these species, which can be inconspicuous.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-11: Avoidance and Protection of Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail** provides survey methods and appropriate protections for active nests of Ridgway's rails and black rails, as well as additional surveys and protections for salt marsh harvest mice, for work occurring in habitat for these species.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and appropriate protective measures for the California Ridgway's rail, California black rail, salt marsh harvest mouse, and salt marsh wandering shrew.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP ANI-2: Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail** states that no harmful fumigants will be used under the Program Renewal, and no fumigants will be used within habitat for these species.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions protect the California Ridgway's rail, California black rail, salt marsh harvest mouse, or salt marsh wandering shrew within the Program Renewal Area, as these species are not covered under the VHP and the VHP permit area does not (and will not in the future) extend into tidal areas where these species occur. Because the VHP permit area does not extend into these species' habitats, compliance with habitat plan conditions and the payment of VHP land cover fees and specialty fees are not expected to reduce impacts of the Program Renewal on these species and their habitats.

However, VHP-covered Program Renewal activities will comply with the following condition to avoid and minimize impacts on the Alameda song sparrow, within portions of the VHP permit area where this species occurs:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would

contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. However, the payment of VHP land cover fees is expected to have no benefit to the Alameda song sparrow, which does not occur within Habitat Agency reserves.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. However, no VHP-covered activities will affect the California Ridgway's rail, California black rail, salt marsh harvest mouse, salt marsh wandering shrew, or their habitats, as the VHP permit area does not (and will not in the future) extend into tidal habitats.

VHP-covered Program Renewal activities have some potential to result in direct impacts on individual Alameda song sparrows and their habitat, as this species could occur within limited portions of the VHP permit area. With implementation of BMPs to avoid the loss or disturbance of active nests, impacts of VHP-covered Program Renewal activities on individual Alameda song sparrows would be less than significant under CEQA. Any limited residual indirect disturbance of foraging individuals by maintenance personnel following implementation of BMPs would be negligible and less than significant under CEQA. No mitigation measures are necessary.

Impacts of VHP-covered activities on suitable breeding and foraging habitat for the Alameda song sparrow would be considered significant under CEQA because these habitats are extremely limited locally and regionally. The implementation of Mitigation Measure BIO-8, which includes mitigation for impacts to tidal habitats, would reduce this impact to less than significant levels. This mitigation would compensate for all impacts of VHP-covered Program Renewal activities on the Alameda song sparrow by restoring extensive vegetated tidal marsh that would provide breeding and foraging habitat for this species, thereby ensuring that the Program Renewal does not substantially reduce the number or restrict the range of this species, have a substantial adverse effect on the species, or impede the use of their nursery sites.

Mitigation Measure BIO-8. Island Ponds Mitigation

Permanent impacts to tidal marsh habitat that is in the range of these species will be mitigated by Valley Water through application of Island Ponds mitigation credit. When this is done, the mitigation will be considered to function as mitigation in perpetuity for that location. Temporary impacts to tidal marsh and permanent impacts to habitats other than tidal marsh within the mapped range of these species will be mitigated using the mitigation options described in the SMP Manual and summarized under "Mitigation Approach" above (e.g., land acquisition and conservation, trash cleanup, seeding, native plant revegetation, encampment removal, bank rehabilitation, etc.). Temporary mitigation will not be considered mitigation in perpetuity and subsequent impacts in that location will require additional mitigation. Physical breaching of the Island Pond levees, and other physical work required for this tidal restoration has already occurred, and no further activities (other than continued monitoring of marsh development per the 2002–

2012 SMP monitoring requirements) are proposed by Valley Water. Maintenance activities that occur within these species' ranges, but which are anticipated to have a neutral or positive effect on the site's habitat function, will not require compensatory mitigation. Only maintenance activities that result in a negative impact to the species' habitat as determined by a qualified biologist will require compensatory mitigation to be provided by Valley Water. Projects which are modified to provide a net positive effect on the site's function as habitat for these species will not require mitigation. If all remaining mitigation credit in the Island Ponds is exhausted during the course of the Program Renewal, Valley Water can propose additional mitigation projects to offset impacts to tidal marsh species habitats.

Activities Not Covered under the VHP

With the implementation of BMPs, effects of non-VHP-covered Program Renewal activities on the California Ridgway's rail, California black rail, Alameda song sparrow, salt marsh harvest mouse, salt marsh wandering shrew, and their habitats would be minimized. BMPs would ensure that the direct and indirect disturbance of active nests of the California Ridgway's rail, California black rail, and Alameda song sparrow is avoided, and individual salt marsh harvest mice and salt marsh wandering shrews that may be present in work areas are also avoided. Any limited residual indirect disturbance of foraging individuals by maintenance personnel following implementation of BMPs would be negligible, and these effects are less than significant under CEQA. No mitigation measures are necessary.

Residual impacts on suitable breeding and foraging habitat for these species, would be considered significant under CEQA because these habitats are extremely limited locally and regionally. In addition, residual impacts due to the loss or modification of upland transitional habitats and high-tide refugial habitats for all species except the Alameda song sparrow would also be considered significant under CEQA because these habitats are extremely limited locally and regionally, and the loss of high-tide refugia may contribute to the future loss of individual Ridgway's rails, black rails, salt marsh harvest mice, and/or salt marsh wandering shrews, which would have a substantial effect on local and regional populations. The implementation of Mitigation Measure BIO-8, which includes mitigation for impacts to tidal habitats, would reduce this impact to less-than-significant levels under CEQA by restoring extensive vegetated tidal marsh that would provide breeding and foraging habitat for these species, thereby ensuring that the Program Renewal does not substantially reduce the number or restrict the range of these species, have a substantial adverse effect on these special-status species, or impede the use of their nursery sites.

SUMMARY AND CONCLUSION

Program Renewal activities can result in significant impacts on the California Ridgway's rail, California black rail, Alameda song sparrow, salt marsh harvest mouse, and/or salt marsh wandering shrew due to the loss of individuals as well as suitable habitats. However, no VHP-covered activities will affect the California Ridgway's rail, California black rail, salt marsh harvest mouse, salt marsh wandering shrew, or their habitats, as the VHP permit area does not (and will not in the future) extend into tidal habitats.

With the implementation of BMPs, effects of Program Renewal activities on the California Ridgway's rail, California black rail, Alameda song sparrow, salt marsh harvest mouse, salt

marsh wandering shrew, and their habitats would be reduced to less than significant levels under CEQA, regardless of VHP coverage. Residual impacts on suitable breeding and foraging habitat for these species, would be considered significant under CEQA because these habitats are extremely limited locally and regionally. In addition, residual impacts due to the loss or modification of upland transitional habitats and high-tide refugial habitats for all species except the Alameda song sparrow would also be considered significant under CEQA because these habitats are extremely limited locally and regionally, and the loss of high-tide refugia may contribute to the future loss of individual Ridgway's rails, black rails, salt marsh harvest mice, and/or salt marsh wandering shrews, which would have a substantial effect on local and regional populations. The implementation of Mitigation Measure BIO-8, which includes mitigation for impacts to tidal habitats, would reduce impacts of VHP-covered activities on habitats for the Alameda song sparrow and impacts of non-VHP-covered activities on habitats for the California Ridgway's rail, California black rail, Alameda song sparrow, salt marsh harvest mouse, and salt marsh wandering shrew to less-than-significant levels under CEQA by restoring extensive vegetated tidal marsh that would provide breeding and foraging habitat for these species, thereby ensuring that the Program Renewal does not substantially reduce the number or restrict the range of these species, have a substantial adverse effect on these special-status species, or impede the use of their nursery sites.

Impact BIO-1P: Impacts on the Western Snowy Plover, Swainson's Hawk, Tricolored Blackbird, Long-Eared Owl, Loggerhead Shrike, and San Francisco Common Yellowthroat (Less than Significant)

The western snowy plover, federally threatened and a California species of special concern; the Swainson's hawk and tricolored blackbird, state threatened species; and the long-eared owl, loggerhead shrike, and San Francisco common yellowthroat, which are California species of special concern, are assessed together because the Program Renewal will avoid impacts on active nests of these species through the implementation of BMPs and adherence to VHP conditions, and residual impacts due to indirect disturbance of individuals and the loss or modification of suitable habitat are considered less than significant under CEQA.

IMPACT ASSESSMENT

Figure 3.4-8 depicts the locations of suitable western snowy plover nesting habitat in the Program Renewal Area within 1 mile of projected maintenance activities, and Figure 3.4-13 depicts the upstream extent of suitable nesting habitat for the San Francisco common yellowthroat along streams in the Program Renewal Area. This mapping is based on known occurrences of these species and characteristics of suitable habitats. Suitable nesting habitat for the San Francisco common yellowthroat extends farther upstream compared to habitat for the Alameda song sparrow (discussed separately under Impact BIO-1O above), because this species will breed in freshwater marshes; however, the greatest proportion of nesting individuals are located in brackish and freshwater marshes near the edge of the Bay. Because the tricolored blackbird is an itinerant breeder and its nesting habitat is patchily distributed, suitable nesting habitat is not mapped for this species.

The western snowy plover is associated with non-tidal, saline-managed ponds and salt panne habitats in the northernmost portion of the Program Renewal Area. Although Figure 3.4-8 depicts the locations of potential western snowy plover nesting habitat based on recent known nesting locations, the extent and location of suitable habitat may change in

the future with changes to pond management and the implementation of restoration projects. No suitable nesting habitat for snowy plovers is present within maintenance activity areas; thus, direct impacts on an active nest of western snowy plovers and suitable nesting habitat for this species are not expected to occur. However, Program Renewal activities could result in the indirect disturbance of active snowy plover nests located in adjacent areas. In addition, breeding and nonbreeding western snowy plovers forage in small numbers year-round on open levees or mudflats in maintenance activity areas located adjacent to suitable ponds (as shown on Figure 3.4-8). Maintenance activities (sediment removal, in-stream vegetation management, aquatic herbicide application, and hand weed abatement) are projected close enough to nesting habitat for the western snowy plover to result in indirect effects on active nests of this species, and/or the indirect disturbance of roosting and foraging individuals, along the lower reaches of San Tomas Aquino Creek and the Guadalupe River.

Swainson's hawks are known to nest in small numbers (i.e., one or two pairs) in southern Santa Clara County, and a pair has nested in the recent past near Coyote Creek in northern Coyote Valley where maintenance activities are projected to occur. Additional nesting pairs may occur in the Program Renewal Area vicinity in future years as the species' population continues to increase. This, nesting pairs of this species could occur along Program Renewal Area streams in the future. However, due to the small number of pairs expected to nest in the county (now and in the future), and because Swainson's hawks in the Program Renewal Area do not necessarily nest preferentially along streams, few nesting, roosting, or foraging individuals are expected to be affected by Program Renewal activities.

The tricolored blackbird is a highly colonial nester that nests uncommonly in extensive stands of tall emergent herbaceous vegetation in freshwater marshes and ponds in the Program Renewal Area. Individuals occur as nonbreeding foragers throughout the Program Renewal Area year-round. The species is not known to have nested previously within or adjacent to areas where maintenance activities are projected to occur. Locations in the Program Renewal Area where tricolored blackbirds are most likely to potentially nest include the Almaden Valley, the Coyote Valley, and South County areas.

The long-eared owl is not known to nest in the Program Renewal Area, but it has been recorded nesting just outside the Program Renewal Area in Ed Levin County Park, west of Calaveras Reservoir (Noble 2007). Accordingly, it is possible that small numbers of this species (i.e., a few pairs, at most) may nest in riparian, oak woodland, and/or mixed evergreen forest in the Program Renewal Area, particularly in foothill areas. This species is not expected to nest on the Valley floor, where the majority of Program Renewal activities are projected to occur. Due to limited numbers of this species that nest and occur within the Program Renewal Area, as well as the fact that most projected Program Renewal activities will occur in portions of the Program Renewal Area where this species is not expected to be present, maintenance activities are unlikely to impact an active nest of this species or disturb roosting and foraging individuals.

The loggerhead shrike nests in the Program Renewal Area in open grassland, shrubland, and agricultural habitats that contain suitable brush, shrubs, or trees for nesting. This species' population in Santa Clara County has declined in recent years, and it is currently known to nest regularly in small numbers only in the Gilroy area, though some potential for nesting is present in open habitats along the San Francisco Bay, in Coyote Valley, and in Morgan Hill. Relatively few nesting, roosting, or foraging individuals are expected to be affected by

Program Renewal activities due to the limited extent of maintenance activities that would occur in suitable habitat.

The San Francisco common yellowthroat is a fairly common breeder in herbaceous vegetation in fresh and brackish marshes in the northern portion of the Program Renewal Area. It is known to nest in tidal salt and brackish marshes near the edge of the South Bay, as well as in herbaceous streambank habitat and ruderal floodplain habitat along streams entering the Bay such as lower Coyote Creek and the Guadalupe River (Bousman 2007d). Individuals will also forage in wetland and riparian habitats throughout the Program Renewal Area year-round. Because this species nests and forages in wetland and riparian habitats where many maintenance activities are focused, maintenance activities could affect a relatively large number of nesting pairs and/or foraging individuals of this species over the course of the Program Renewal.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on birds in the Program Renewal Area due to direct and indirect disturbance and temporary or permanent impacts on suitable habitat. In addition, individuals of these species (especially eggs or young in San Francisco common yellowthroat or tricolored blackbird nests) may be killed or injured during maintenance activities due to crushing by construction personnel or equipment. Activities causing a substantial increase in noise or visual disturbance near active nest locations may also result in the abandonment of active nests of these bird species, and possibly the loss of eggs or young as a result. Such activities may also disturb roosting and foraging individuals, which would likely move out of the area. If a colony of tricolored blackbirds were to establish in the Program Renewal Area, maintenance activities could affect breeding productivity of a large number of individuals if the colony was disturbed, or habitat removed.

Due to the sensitivity of the western snowy plover, tricolored blackbird, Swainson's hawk, loggerhead shrike, and long-eared owl and their limited population sizes in the Program Renewal Area, the loss of individuals or active nests of these species such that a substantial (i.e., population-level) impact occurs would result in a substantial impact on regional populations and would thus be significant under CEQA. Due to the potential for maintenance activities to result in the loss of relatively large numbers of San Francisco common yellowthroat nests relative to their regional populations, impacts of maintenance activities on individuals of this species would also be considered significant under CEQA. Any indirect disturbance of foraging individuals of any of these species would be considered less than significant, as these species are highly mobile and can easily move away from work activities.

Maintenance activities also could remove or modify suitable nesting and foraging habitat for the tricolored blackbird, Swainson's hawk, loggerhead shrike, long-eared owl, and San Francisco common yellowthroat in the Program Renewal Area. No direct impacts to habitat for western snowy plovers are expected to occur; however, Table 3.4-15 provides the estimated extent of Program Renewal impacts in areas within 300 feet of mapped snowy plover habitat (0.9 acre over the 10-year Program Renewal) to illustrate the limited extent of adjacent activities.

Maintenance activities would result in the temporary and permanent loss and/or modification of a very limited area of nesting and foraging habitat for the Swainson's hawk, loggerhead shrike, and long-eared owl in the Program Renewal Area. Table 3.4-5 provides

estimates of temporary and permanent impacts of Program Renewal activities within habitats throughout the Program Renewal Area that potentially support these species. However, because the Swainson's hawk, loggerhead shrike, and long-eared owl make only very limited use of these habitats in the Program Renewal Area, only a fraction of Program Renewal impacts estimated in Table 3.4-5 would affect these species. Of the impacts listed in Table 3.4-5, impacts within woody riparian habitats and non-developed uplands would potentially affect nesting and foraging habitat for these species where they occur in the Program Renewal Area. However, suitable nesting and foraging habitat used by these species is extensively available in the Program Renewal Area vicinity. Thus, implementation of the Program Renewal is expected to have extremely limited impacts on these species' habitats and would not remove or degrade habitat such that regional populations of these species would be impacted. Therefore, Program Renewal impacts due to the loss or degradation of habitat for these three species would be less than significant.

The total estimated acreages of Program Renewal impacts within suitable habitat for the San Francisco common yellowthroat are provided in Table 3.4-15. Of these, impacts to vegetated wetlands (153.0 acres), herbaceous streambank vegetation (307.6 acres), and woody riparian vegetation (30.1 acres) could affect nesting and foraging habitat for this species, while impacts to non-developed uplands (283.1 acres) could affect foraging habitat. Based on experience from SMP-1 and SMP-2, these acreages are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities).

Valley Water studies have found that wetland vegetation often quickly re-establishes following sediment removal activities; therefore, any impacts on nesting habitat for the San Francisco common yellowthroat would be of short duration (i.e., 2–3 years). In addition, while frequent, repetitive sediment removal or vegetation management in freshwater areas would result in a long-term reduction of habitat for San Francisco common yellowthroats; less frequent, though periodic, sediment removal and herbicide application prevent succession that would ultimately convert high-quality nesting habitat for this species (consisting of emergent vegetation) to less suitable tall woody riparian habitat. Therefore, many Program Renewal activities are expected help to maintain high-quality nesting and foraging habitat for San Francisco common yellowthroats in the Program Renewal Area over the long term, at the expense of 2–3 years of habitat loss immediately following sediment removal or vegetation management. Due to these combined factors, impacts of maintenance activities on suitable habitat for the San Francisco common yellowthroat are considered less than significant under CEQA.

Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within herbaceous and woody riparian habitats throughout the Program Renewal Area, as well as adjacent uplands that provide foraging habitat. However, the majority of these impacts will occur within existing PMAs (for sediment removal, aquatic herbicide application, and vegetation management) and areas where maintenance occurs annually (for mechanical mowing and hand weed abatement), and tricolored blackbirds are not known to nest in these areas. As a result, although the Program Renewal will impact relatively large areas of habitat over the 10-year period, the potential for maintenance activities to result in the loss of nesting habitat that could be occupied by tricolored

blackbirds is extremely low. Further, no high-quality habitat for the tricolored blackbird is present along Program Renewal Area channels where maintenance activities are projected to occur. In addition, tricolored blackbird nesting sites within the Program Renewal Area that have been used in recent decades have typically been used for only 1 to several years, in part because of the nomadic nature of this species' colonies and in part because of succession (e.g., conversion of a cattail marsh into dense willows). Due to these combined factors, impacts due to the temporary loss of suitable habitat for tricolored blackbirds would be considered less than significant under CEQA because: (1) habitat availability would not limit the occurrence of tricolored blackbirds in the Program Renewal Area, based on the availability of suitable nesting habitat in some areas that have not been occupied in years; (2) no high-quality habitat exists with regular tricolored blackbird use that is projected to be impacted by maintenance activities; and (3) the sites within the Program Renewal Area that have been used in recent decades have typically been used for only 1 to a few years, in part because of the nomadic nature of this species' colonies and in part because of succession (e.g., conversion of a cattail marsh into dense willows).

Table 3.4-15. Estimated 2027-2036 Total[1] Program Renewal Impacts to Habitats for San Francisco Common Yellowthroats and Adjacent to Habitats for Western Snowy Plovers[4]

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Western Snowy Plover (No direct impacts will occur; impacts are estimated within 300 feet of projected activities)							
Vegetated Wetlands (Tidal Salt Marsh and Tidal Brackish Marsh)	<0.1	0.2	<0.1	0.0	0.0	0.0	0.2
Aquatic Habitat (Tidal and Intertidal)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Herbaceous Streambank (California Annual Grassland)	0.0	0.1	0.0	0.0	0.0	0.2	0.3
Woody Riparian (Riparian Forest and Scrub	0.0	<0.1	<0.1	0.0	0.0	0.0	<0.1
Other (Non-Developed Uplands)[3]	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Total	**0.2**	**0.3**	**<0.1**	**0.0**	**0.0**	**0.4**	**0.9**
San Francisco Common Yellowthroat							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh, Tidal Salt Marsh, and Tidal Brackish Marsh)	13.0	115.6	24.3	0.0	0.0	0.0	153.0
Aquatic Habitat (Riverine, Tidal, and Intertidal)	52.0	0.0	0.0	0.0	0.0	0.0	52.0
Herbaceous Streambank (California Annual Grassland)	0.0	64.6	1.4	0.0	191.6	50.1	307.6
Woody Riparian (Riparian Forest and Scrub)	0.0	9.8	18.9	1.4	0.0	0.0	30.1

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Other (Non-Developed Uplands)[3]	0.0	0.0	1.7	0.3	232.9	48.1	283.1
Total	**65.0**	**190.0**	**46.3**	**1.7**	**424.5**	**98.2**	**825.7**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided.

[2] All impacts of sediment removal, aquatic herbicide application, and vegetation management (<6" dbh) are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to reduce impacts on the western snowy plover, San Francisco common yellowthroat, and tricolored blackbird:

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** will minimize the exposure of soils containing mercury in portions of the Guadalupe River watershed affected by historic mercury mining.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-6.1: Protection of Alameda Song Sparrow and San Francisco Common Yellowthroat** provides additional measures to ensure the protection of active nests of these species, which can be inconspicuous.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and appropriate protective measures.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of the western snowy plover or San Francisco common yellowthroat within the Program Renewal Area, as these species are not covered under the VHP. In addition, the VHP permit area does not (and will not in the future) extend into areas where the western snowy plover occurs. Because the VHP permit area does not extend into this species' habitats, compliance with habitat plan conditions and the payment of VHP land cover fees and specialty fees are not expected to reduce impacts of the Program Renewal on this species and its habitats. However, the loggerhead shrike and Swainson's hawk are proposed for VHP coverage in the amendment currently being processed, so these species may be formally covered by the VHP once the amendment is approved. At that time, Valley Water would comply with any VHP conditions specific to these species. In addition, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on the tricolored blackbird; these conditions will also avoid and minimize impacts on habitats for the San Francisco common yellowthroat in portions of the VHP permit area where this species occurs:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.
- **Condition 17. Tricolored Blackbird** requires habitat surveys and preconstruction surveys for nesting tricolored blackbirds, as well as appropriate avoidance and minimization measures and construction monitoring to protect nesting colonies. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-6 above.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. These fees will benefit the tricolored blackbird, which is a covered species under the VHP. These fees are also expected to benefit the long-eared owl to some extent, as this species is found in more remote areas of Santa Clara County above the Valley floor, where VHP reserves are located. VHP fees are expected to have limited benefit to the loggerhead shrike and Swainson's hawk until those species are added to the VHP as covered species, at which point the VHP's conservation Program Renewal would include specific habitat preservation, enhancement, and management measures for those species. VHP fees would not benefit the western snowy plover and would have limited benefit for the San Francisco common yellowthroat, as these species do not occur within Habitat Agency reserves.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. Although the loggerhead shrike and Swainson's hawk are proposed for VHP coverage, the other bird species discussed in this impact section are not. In addition, no VHP-covered activities will affect the western snowy plover or its habitats, as the VHP permit area does not (and will not in the future) extend into tidal habitats.

VHP-covered Program Renewal activities have some potential to result in direct impacts on individual Swainson's hawks, loggerhead shrikes, long-eared owls, tricolored blackbirds, and San Francisco common yellowthroats and their habitat. Due to the limited occurrence of the Swainson's hawk, loggerhead shrike, and long-eared owl in the Program Renewal Area, the likelihood that maintenance activities will affect individuals of these species is relatively low. Nevertheless, with implementation of BMPs to avoid the loss or disturbance of active nests of Swainson's hawks, San Francisco common yellowthroats, loggerhead shrikes, and long-eared owls, impacts of VHP-covered Program Renewal activities on individuals of this species are less than significant under CEQA. Condition 17 of the VHP will replace the protections outlined in BMP GEN-6 for the tricolored blackbird. With adherence to Condition 17, impacts of VHP-covered Program Renewal activities on individual tricolored blackbirds are also less than significant under CEQA. No mitigation measures are necessary.

Due to potential benefits of maintenance activities on habitats for San Francisco common yellowthroats, impacts of VHP-covered Program Renewal activities on habitats for this species are less than significant under CEQA. Due to the broad availability of nesting habitat for tricolored blackbirds in the Program Renewal Area and other factors, impacts VHP-covered Program Renewal activities on habitats for this species are also less than significant under CEQA. In addition, because the Swainson's hawk, loggerhead shrike, and long-eared owl make only very limited use of available nesting and foraging habitats in the Program Renewal Area, only a fraction of Program Renewal impacts would affect these species. Because of the relatively small amount of habitat for the Swainson's hawk, loggerhead shrike, and long-eared owl that would be affected by the Program Renewal relative to the extent of available habitat in the region, impacts on habitat for these species would be very limited, and considered less than significant under CEQA. Nevertheless, VHP-covered activities will implement BMPs, comply with VHP conditions, and pay of VHP land cover fees and specialty fees to reduce VHP-covered Program Renewal impacts on habitats for these species. No mitigation measures are necessary.

Activities Not Covered under the VHP

Non-VHP-covered Program Renewal activities within tidal portions of the Program Renewal Area can result in adverse effects on the western snowy plover and San Francisco common yellowthroat due to the direct (for the San Francisco common yellowthroat) and indirect (for both species) impacts on active nests, as well as nesting and foraging habitat for the San Francisco common yellowthroat. Maintenance activities conducted in nontidal habitats can also result in adverse effects on the Swainson's hawk, San Francisco common yellowthroat, long-eared owl, loggerhead shrike, and tricolored blackbird, as well as suitable nesting and foraging habitat for these species.

With implementation of BMPs to avoid the loss or disturbance of active nests, impacts of non-VHP-covered Program Renewal activities on individual western snowy plovers, tricolored blackbirds, Swainson's hawks, long-eared owls, loggerhead shrikes, and San Francisco common yellowthroats are less than significant under CEQA, and no mitigation measures are necessary.

No direct impacts to habitat for western snowy plovers are expected to occur. Due to potential benefits of maintenance activities on habitats for San Francisco common yellowthroats, impacts of non-VHP-covered Program Renewal activities on habitats for this species are less than significant under CEQA. Due to the broad availability of nesting habitat for Swainson's hawks, tricolored blackbirds, loggerhead shrikes, and long-eared owls in the Program Renewal Area and other factors, impacts non-VHP-covered Program Renewal activities on habitats for this species are also less than significant under CEQA. Implementation of BMPs will further reduce impacts on habitats for San Francisco common yellowthroats, loggerhead shrikes, long-eared owls, and tricolored blackbirds. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

Program Renewal impacts within tidal portions of the Program Renewal Area can result in adverse effects on the western snowy plover and San Francisco common yellowthroat due to the direct (for the San Francisco common yellowthroat) and indirect (for both species) impacts on active nests, as well as nesting and foraging habitat for the San Francisco common yellowthroat. Maintenance activities conducted in nontidal habitats can also result in adverse effects on the Swainson's hawk, San Francisco common yellowthroat, loggerhead shrike, long-eared owl, and tricolored blackbird, as well as suitable nesting and foraging habitat for these species. No direct impacts to habitat for western snowy plovers are expected to occur.

Program Renewal impacts on habitats for the San Francisco common yellowthroat would be less than significant under CEQA because maintenance activities would provide some benefit to habitat for this species. Due to the broad availability of nesting habitat for tricolored blackbirds in the Program Renewal Area and other factors, impacts Program Renewal activities on habitats for this species are also less than significant under CEQA. No mitigation measures are necessary.

No VHP-covered activities will affect the western snowy plover or its habitats, as the VHP permit area does not (and will not in the future) extend into tidal habitats. With implementation of BMPs to avoid the loss or disturbance of active nests of Swainson's hawks, San Francisco common yellowthroats, loggerhead shrikes, and long-eared owls, impacts of VHP-covered Program Renewal activities on individuals of these species are less than significant under CEQA. Condition 17 of the VHP will replace the protections outlined in BMP GEN-6 for the tricolored blackbird. With adherence to Condition 17, impacts of VHP-covered Program Renewal activities on individual tricolored blackbirds are also less than significant under CEQA. No mitigation measures are necessary.

With implementation of BMPs to avoid the loss or disturbance of active nests, impacts of non-VHP-covered Program Renewal activities on individual Swainson's hawks, western snowy plovers, tricolored blackbirds, loggerhead shrikes, long-eared owls, and San Francisco common yellowthroats are less than significant under CEQA. Due to potential

benefits of maintenance activities on habitats for San Francisco common yellowthroats, impacts of non-VHP-covered Program Renewal activities on habitats for this species are less than significant under CEQA. Due to the broad availability of nesting habitat for Swainson's hawks, tricolored blackbirds, loggerhead shrikes, long-eared owls, in the Program Renewal Area and other factors, impacts non-VHP-covered Program Renewal activities on habitats for this species are also less than significant under CEQA. Implementation of BMPs will further reduce impacts on habitats for Swainson's hawks, San Francisco common yellowthroats, loggerhead shrikes, long-eared owls, and tricolored blackbirds. No mitigation measures are necessary.

Impact BIO-1Q: Impacts on the Least Bell's Vireo and Yellow-Breasted Chat (Less than Significant with Mitigation)

The state and federally endangered least Bell's vireo and the yellow-breasted chat, a California species of special concern, are assessed together because Program Renewal impacts on these species and their habitats will be similar, these species both occur in sensitive riparian habitats, the Program Renewal will avoid the loss of individuals through the implementation of BMPs, and residual Program Renewal impacts on riparian habitats for these species are considered significant under CEQA and require mitigation.

IMPACT ASSESSMENT

High-quality nesting habitat for the least Bell's vireo in the Program Renewal Area is located along the Pajaro River, Pacheco Creek downstream of Bell Station/Kaiser Aetna Road, Uvas Carnadero Creek south of Highway 152 West/Hecker Pass Highway, and Llagas Creek south of Highway 152 East/Pacheco Pass Highway. These areas were identified based on the few known occurrences of the species along Llagas Creek and the Pajaro River, as well as the presence of suitable high-quality riparian habitat dominated by cottonwoods and willows for nesting. These stream reaches also provide high-quality nesting habitat for yellow-breasted chats; however, the yellow-breasted chat has a patchy breeding distribution, and this species' nesting habitat is much more widespread in the Program Renewal Area compared to the least Bell's vireo (as discussed below).

The least Bell's vireo, a state and federally endangered species, was thought to have been extirpated from northern California by 1970, but in recent years populations have begun to rebound due to intensive recovery efforts (Kus 2002). The only breeding records in Santa Clara County are from Llagas Creek southeast of Gilroy in 1997 and the Pajaro River south of Gilroy in 1932. The only other confirmed records in Santa Clara County are of one or two singing males along lower Llagas Creek in May 2001, and a spring migrant in Alviso in May 2016. In future years, Least Bell's vireos may increase in number and distribution in Santa Clara County as the species' core populations, located farther to the south, increase. However, this species is unlikely to ever be more than a rare and very locally occurring breeder along South County streams due to its limited historical distribution in Santa Clara County as well as the abundance of brood-parasitic brown-headed cowbirds in the Program Renewal Area. Maintenance activities (sediment removal, in-stream vegetation management, aquatic herbicide application, mechanical mowing, and a small amount of hand weed abatement) are projected to occur along Llagas Creek and Uvas Carnadero Creek where high-quality nesting habitat for this species is present.

The yellow-breasted chat is a very scarce breeder in the Program Renewal Area due to the loss and degradation of suitable riparian breeding habitat throughout Santa Clara County as

well as the presence of brood-parasitic brown-headed cowbirds (Bousman 2007f). Optimal chat habitat is characterized by relatively large patches of riparian vegetation with a thick shrubby understory, a few taller trees, and limited overall canopy cover. In recent years, chats have been recorded in the largest numbers and most regularly (compared to other locations in the county) along lower Llagas Creek from the vicinity of the South County Regional Wastewater Authority Plant downstream to the Pajaro River (Padley 2010, H. T. Harvey & Associates 2010b). Yellow-breasted chats likely prefer this area due to the lack of development on either side of the creek as well as the weedy nature of the levee in this area, as such weedy vegetation provides attractive foraging habitat for this species adjacent to their woody riparian breeding habitat. Elsewhere in the Program Renewal Area, nesting has been confirmed most recently only along Coyote Creek upstream from U.S. Highway 101 near Hellyer Park, where a family group was seen in 1995 (S. Rottenborn, pers. obs.). However, the species may breed in small numbers elsewhere on the Valley floor (e.g., along lower Uvas/Carnadero Creek, the Pajaro River, and possibly elsewhere) in willow-dominated riparian habitats.

As discussed under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on birds in the Program Renewal Area due to direct and indirect disturbance and temporary or permanent impacts on suitable habitat. In addition, individuals of these species (especially eggs or young in nests) may be killed or injured during maintenance activities due to crushing by construction personnel or equipment. Activities causing a substantial increase in noise or visual disturbance near active nest locations may result in nest abandonment, and possibly the loss of eggs or young as a result. Due to the sensitive of the species, increased noise, movement of equipment, or human presence in upland vegetation adjacent to riparian habitats could also result in the abandonment of a territory by a pair of least Bell's vireos attempting to nest or preclude the use of habitat by a pair of vireos that would have otherwise attempted nesting. Such activities may also disturb roosting and foraging individual least Bell's vireos and yellow-breasted chats, which would likely move out of the area. Human disturbance, leading to reduced attendance of nests, could also potentially increase the risk of brood parasitism of least Bell's vireo and yellow-breasted chat nests by brown-headed cowbirds. Due to the rarity of the least Bell's vireo and yellow-breasted chat in the region, the loss of individuals of these species due to Program Renewal activities such that a substantial (i.e., population-level) impact would occur would be considered significant under CEQA.

Maintenance activities within suitable riparian habitat may also result in the temporary and permanent loss or modification of riparian habitat used for nesting by the least Bell's vireo and yellow-breasted chat. The introduction of nonnative vegetation could also degrade riparian habitats used by these species. In addition, upland vegetation adjacent to riparian habitats is frequently used for foraging, and sometimes nesting, by least Bell's vireos (USFWS 1998), and the pair that attempted nesting in 1997 along lower Llagas Creek in the Program Renewal Area was frequently seen in tall, weedy vegetation on the bank and bench outside of the willow riparian corridor (S. Rottenborn, pers. obs.). Yellow-breasted chats will use such vegetation for foraging as well. Thus, maintenance activities that result in the removal or modification of upland vegetation adjacent to riparian habitat may also affect an area's value as foraging habitat for the least Bell's vireo and yellow-breasted chat. Maintenance that is performed more frequently (e.g., annually) and removes shrubs and tall forbs from locations such as levee tops and lower maintenance roads adjacent to riparian habitat would remove foraging habitat for these species, and/or maintain habitat in a state

that would not provide suitable foraging opportunities for least Bell's vireos and yellow-breasted chats. In contrast, less periodic maintenance (e.g., every 3–4 years) would help to maintain the early seral nature of this vegetation and provide a benefit to least Bell's vireos and yellow-breasted chats.

The total estimated acreages of Program Renewal impacts within high-quality habitat for the least Bell's vireo and yellow-breasted chat are provided in Table 3.4-16. Of these, impacts to woody riparian vegetation (3.6 acres) could affect nesting and foraging habitat for these species, while impacts to herbaceous streambank vegetation (12.3 acres) and adjacent non-developed uplands (5.4 acres) could affect foraging habitat. Based on experience from SMP-1 and SMP-2, these impacts are primarily the result of restoration activities, and are expected to be overestimates of the extent of impacts within these habitats, and will encompass the acreages of all maintenance activity impacts that are included in the estimates (i.e., sediment removal, vegetation management, in-stream herbicide application, mechanical mowing, and hand weed abatement), as well as those for which estimates are not specifically provided (i.e., bank stabilization, management of animal conflicts, and minor maintenance activities). Because these areas are important to regional least Bell's vireo and yellow-breasted chat populations, such an impact on the species' populations would be substantial and considered significant under CEQA.

Table 3.4-16. Estimated 2027-2036 Total[1] Program Renewal Impacts to Habitats for Least Bell's Vireos and Yellow-Breasted Chats[4]

Community and Land Cover	Sediment Removal[2] (acres) – Temporary	Aquatic Herbicide Application[2] (acres) – Temporary	Vegetation Management (<6" dbh)[2] (acres) – Temporary	Tree Removal (>6" dbh) (acres) – Permanent	Mechanical Mowing (acres) – Temporary	Hand Weed Abatement (acres) – Temporary	Total (acres)
Least Bell's Vireo and Yellow-Breasted Chat							
Vegetated Wetlands (Coastal and Valley Freshwater Marsh)	1.3	14.0	3.0	0.0	0.0	0.0	18.3
Aquatic Habitat (Riverine)	5.3	0.0	0.0	0.0	0.0	0.0	5.3
Herbaceous Streambank (California Annual Grassland)	0.0	7.8	0.2	0.0	4.3	0.0	12.3
Woody Riparian (Riparian Forest and Scrub)	0.0	1.2	2.3	0.2	0.0	0.0	3.6
Other (Non-Developed Uplands)[3]	0.0	0.0	0.2	0.0	5.2	0.0	5.4
Total	**6.6**	**23.0**	**5.6**	**0.2**	**9.4**	**0.0**	**44.9**

[1] Impacts of ecologically beneficial activities (i.e., the removal of invasives, management of vegetation for fire resilience, maintenance of restoration sites, management of vegetation for ecological health) are not included in the totals. Impacts of all other maintenance activities not specifically listed are encompassed within the conservative estimates provided.

[2] All impacts of sediment removal, aquatic herbicide application, and vegetation removal (<6" dbh) are classified as temporary impacts, as those areas are expected to restore to their former conditions after maintenance is complete.

[3] Grasslands, chaparral and northern coastal scrub, oak woodlands, conifer woodlands, and non-developed irrigated agriculture.

[4] All acreages have been estimated by Valley Water as described under *Impact Assessment* above.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will the following BMPs to reduce impacts on the least Bell's vireo and yellow-breasted chat:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-6.2: Protection of Nesting Least Bell's Vireos** provides additional survey parameters and restrictions on maintenance activities in least Bell's vireo habitat, as well as appropriate protections for active nests of this species.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as appropriate protective measures for active nests.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.

- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of the yellow-breasted chat within the Program Renewal Area, as this species is not covered under the VHP. However, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on the least Bell's vireo and riparian habitats; these conditions will also avoid and minimize impacts on habitats for the yellow-breasted chat in portions of the VHP permit area where this species occurs:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species, including the least Bell's vireo.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 16. Least Bell's Vireo** requires all covered projects within mapped survey areas for this species to conduct habitat surveys and preconstruction surveys and implement avoidance and minimization measures to protect active nests. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-6.2 above.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With the implementation of Program Renewal BMPs, compliance with applicable VHP conditions, and payment of VHP impact fees, impacts of VHP-covered Program Renewal activities on the VHP-covered least Bell's vireo are less than significant under CEQA, and no mitigation measures are necessary. For VHP-covered activities, Condition 16 of the VHP will replace the protections outlined in BMP GEN-6.2.

With the implementation of Program Renewal BMPs to avoid the loss or disturbance of active nests, impacts of VHP-covered Program Renewal activities on individuals of this species are also less than significant under CEQA. However, residual impacts on riparian habitat would remain. The Program Renewal's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit the yellow-breasted chat, which is expected to occur in existing Habitat Agency reserves (which target riparian habitats). As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly "covered species" under the VHP. This conclusion is

supported for the yellow-breasted chat based on the species' occurrence in riparian habitats throughout Santa Clara County, including those in Habitat Agency reserves. Thus, with the implementation of Program Renewal BMPs, compliance with applicable VHP conditions, and payment of all VHP impact fees, impacts of VHP-covered Program Renewal activities on habitat for the yellow-breasted chat are less than significant under CEQA, and no mitigation measures are necessary.

Activities Not Covered under the VHP

No maintenance activities within tidal portions of the Program Renewal Area will result in adverse effects on the least Bell's vireo, the yellow-breasted chat, or their habitats, as these species do not occur within tidal habitats in the Program Renewal Area. For other non-VHP-covered maintenance activities, with the implementation of BMPs, effects of the Program Renewal on individual least Bell's vireos and yellow-breasted chats (i.e., due to the direct and indirect disturbance of active nests) would be effectively minimized. Residual effects of non-VHP-covered Program Renewal activities on these species include temporary and permanent impacts on suitable nesting and foraging habitat, as well as the limited indirect disturbance of foraging individuals by maintenance personnel and equipment. Impacts on foraging individuals would be negligible; however, as discussed above, impacts on suitable nesting and foraging habitat for these species would be considered significant under CEQA. Mitigation Measure BIO-9 below would be implemented to reduce this impact to a less-than-significant level.

Mitigation Measure BIO-9: Compensatory Mitigation for Impacts on Least Bell's Vireo and Yellow-Breasted Chat Nesting and Foraging Habitats

If non-VHP-covered work activities would occur within areas potentially supporting nesting least Bell's vireos and/or yellow-breasted chats outside of existing PMAs, Valley Water will provide mitigation to compensate for impacts on habitat for these species. Only activities that result in a negative impact to least Bell's vireo habitat as determined by a qualified biologist will require mitigation. At the end of each year's maintenance period, Valley Water will determine the extent of impacts to lands that are within potentially suitable habitat for these species.

Compensation for these effects will be provided by Valley Water via the payment of VHP impact fees through the Habitat Agency's Voluntary Fee Payments Policy. The VHP will require the payment of fees in accordance with the types and acreage of all land cover types impacted by the activity (including when no impacts on individual least Bell's vireos and yellow-breasted chats have occurred).

Alternatively, mitigation may be provided by Valley Water via the implementation of Mitigation Measures BIO-12. The mitigation provided will be required to be located in areas where habitat creation, restoration, and preservation will benefit the affected species, and such that mitigation according to these measures occurs at a ratio of no less than 1:1 (on an acreage basis). Valley Water will determine whether impacted habitat is suitable for these species on the basis of surveys or comparison of habitat conditions to those in known occupied areas.

SUMMARY AND CONCLUSION

With implementation of BMPs, compliance with VHP conditions, and payment of VHP fees, impacts of VHP-covered Program Renewal activities on the least Bell's vireo and yellow-breasted chat and their habitats are less than significant under CEQA, and no mitigation measures are necessary.

With implementation of BMPs, impacts of VHP-covered Program Renewal activities on individual least Bell's vireos and yellow-breasted chats are less than significant under CEQA, and no mitigation measures are necessary. Although BMPs would reduce the magnitude and extent of non-VHP-covered Program Renewal impacts on habitats for these species, substantial impacts would remain due to the temporary and permanent loss of nesting and foraging habitat. Because of the rarity of these species in the region, as well as the limited extent of available suitable nesting habitat in the Program Renewal Area, such impacts on suitable nesting habitat for these species would be significant under CEQA. Mitigation Measure BIO-9 requires the payment of VHP impact fees or the provision of compensatory mitigation for impacts to riparian habitats potentially supporting these species. With the implementation of this measure, non-VHP-covered Program Renewal impacts on habitat for the least Bell's vireo and yellow-breasted chat are less than significant under CEQA.

Impact BIO-1R: Impacts on the Burrowing Owl (Less than Significant)

IMPACT ASSESSMENT

Burrowing owls occur year-round in the Program Renewal Area in agricultural and grassland habitats where burrows of California ground squirrels are present. However, the species' population in Santa Clara County has undergone a substantial decline in the past 20-30 years. Small breeding populations are known to occur at the San Jose International Airport, in the North San Jose/Alviso area, at Moffett Federal Airfield, and at Shoreline Park in Mountain View, and the Valley Habitat Agency has introduced burrowing owls elsewhere, such as near Coyote Lake Harvey Bear Ranch County Park. Burrowing owls from these populations are unlikely to nest within or adjacent to maintenance activity areas; however, this possibility cannot be ruled out. Foraging owls from breeding populations may occur in grassland habitats along nearby Program Renewal Area channels during the breeding season, and nonbreeding owls could occur more widely in grassland and agricultural habitats throughout the Program Renewal Area during migration and winter.

Burrowing owls occur in annual and perennial grassland habitats, typically with sparse or non-existent tree or shrub canopies. They exhibit strong site fidelity and may use a nesting site year after year. Burrowing owls in the Santa Clara Valley include both year-round residents and migrants that take up residency during the winter. They are routinely observed in open, agricultural, or grassland areas with active squirrel burrows. In the Program Renewal Area, particular concentrations of burrowing owls occur at the San Jose-Santa Clara Water Pollution Control Plant (WPCP) and its buffer lands and at the San Jose International Airport (Figure 3.4-12). However, this species is increasingly disappearing from "infill" locations on the urban Valley floor, and it has practically disappeared as a breeder from areas of the county south of northern San Jose. Burrowing owls were present in the Coyote Valley, Blossom Valley, and Evergreen areas in the 1990s, but they have been infrequently recorded in either area since that time. They are still occasionally recorded in Coyote Valley and in grasslands at higher elevations, such as on Coyote Ridge, but they seem to occur in such areas primarily as nonbreeders (i.e., migrants and wintering birds).

As discussed above under "Impacts on Common and Special-Status Fish and Wildlife," maintenance activities may result in direct and indirect impacts on this species. Impacts from the Program Renewal may affect burrowing owl habitat (nesting, foraging, or wintering) and/or individuals. Burrowing owls can adapt to the presence of humans and are known to nest and forage in open grassland areas adjacent to human developments. However, because they nest underground, individual burrowing owls (especially young or adults in burrows) may be killed or injured during maintenance activities from trampling by construction personnel or equipment. Maintenance activities that occur in close proximity to active burrows may disturb owls to the point of abandoning their burrows, including active nests, eggs, and young. In addition, clearing and grading for access roads, staging areas, and burrow destruction and filling work could result in the direct loss of habitat or individuals through the disturbance of grassland areas that support ground squirrel burrows, and maintenance activities may result in a reduction in the quality of breeding or foraging habitat because of the introduction of nonnative vegetation. Such impacts may occur because of both projected sediment removal and vegetation management activities and unprojected activities (e.g., bank stabilization, management of animal conflicts, and minor maintenance). Small mammal control would reduce the availability of burrows and prey for this species, resulting in the long-term degradation of habitat for breeding and wintering owls, to the extent that these owls use burrows in the levees that would be managed by Valley Water. Pesticides used for vegetation management or management of animal conflicts may deplete prey both within work sites and possibly adjacent areas.

Burrowing owls occur more widely in the South Bay in winter than they do during the breeding season. For example, burrowing owls occur on Coyote Ridge and in Coyote Valley during winter, but they have not been recorded lingering into spring and summer to breed in those areas in recent years. This suggests that wintering habitat for burrowing owls is not limiting the species' South Bay populations. As a result, impacts of Program Renewal activities on wintering owl habitat, including burrows that were occupied by owls only during the winter but that were not used for breeding, are not expected to affect appreciably regional populations of this species. However, as the availability of grassland habitat used for nesting in the Program Renewal Area continues to dwindle because of development, the South Bay breeding population of burrowing owls faces extirpation caused by lack of sufficient suitable nesting and breeding-season foraging habitat and isolation from other populations and habitat areas. Therefore, impacts to individual burrowing owls (at any time of year) and occupied breeding habitats resulting from the Program Renewal would contribute to the broader-scale decline in regional burrowing owl populations. Injury or mortality of individual burrowing owls or disturbance of nests leading to loss of eggs or chicks or abandonment of active nests that result in a substantial (i.e., population-level) effect would be a significant impact under CEQA.

In 2007 and 2008, a habitat assessment, burrow mapping study, and standardized protocol surveys for the burrowing owl were conducted along sections of multiple Valley Water-managed waterways in Palo Alto, Mountain View, Sunnyvale, Santa Clara, San Jose, Alviso, Milpitas, and Gilroy (EDAW 2008). These surveys identified active breeding and overwintering burrowing owls at a few locations in or adjacent to the Project Area (Figure 3.4-12), and potential habitat for burrowing owls was determined to be present along a number of creeks that were surveyed in the Project Area (EDAW 2008). However, no burrowing owls were recorded using Valley Water facilities, such as levees, during either of the two surveys. Similarly, a comprehensive breeding-season survey of the most likely areas

of burrowing owl occurrence in and near the VHP area in 2008 recorded no burrowing owls on Valley Water facilities (Albion Environmental 2008).

Albion Environmental (2008) assessed the potential impact of Valley Water's proposed burrow management on burrowing owls specifically for the SMP. Because no evidence existed that Valley Water levees provided important burrowing owl nesting or roosting habitat (i.e., used regularly or by a sizeable proportion of the South Bay population), Albion Environmental concluded that management of burrows on Valley Water levees would not result in a substantial impact to burrowing owl habitat.

Since 2014, the Valley Habitat Agency has conducted breeding-season burrowing owl surveys throughout much of Santa Clara County. Recent surveys (i.e., within the past 5 years) have not detected breeding burrowing owls in or near projected Program Renewal work areas (Talon Ecological Research Group 2024). Therefore, the actual impacts of Valley Water management of levees on burrowing owl populations are expected to be low.

Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within herbaceous streambank (4,888 acres) and non-developed upland (10,855 acres) habitats that potentially provide nesting and foraging habitat for burrowing owls. The majority of these impacts are expected to be temporary, as disturbed areas will typically be revegetated following maintenance activities. However, some permanent impacts will occur where activities such as bank stabilization result in modifications to natural areas. Because burrowing owl occurrence is so limited relative to the extent of potential habitat available for the species, implementation of the Program Renewal would not remove or degrade large areas of habitat such that the regional population of this species would be impacted, and surveys by the Valley Habitat Agency within the past 5 years have not detected the species breeding in or near projected Program Renewal work areas, As a result, Program Renewal impacts on habitat for the burrowing owl are considered less than significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on burrowing owls and their habitats:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-7: Protection of Burrowing Owls** requires pre-activity surveys and protective measures for burrowing owls that may be present within or adjacent to work activities. Occupied burrows will be avoided by the Program Renewal.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.

- **BMP GEN-15: Prevention of Spread of Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and appropriate protective measures for burrowing owls.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP ANI-3: Burrowing Owl Buffer Zone** specifies that Program Renewal fumigants will not be used within 656 yards around known burrowing owl locations.

In addition, VHP-covered Program Renewal activities will comply with the following condition to avoid and minimize impacts on the burrowing owl:

- **Condition 15. Burrowing Owl** requires habitat surveys and preconstruction surveys for burrowing owls within mapped survey areas, as well as avoidance measures to protect individuals. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-7 above.

Valley Water will also pay VHP land cover fees, calculated based on Program Renewal impacts to land cover types, for VHP-covered activities. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for burrowing owls in Santa Clara County.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With implementation of BMPs, compliance with VHP conditions, and payment of VHP fees, impacts of VHP-covered Program Renewal activities on the VHP-covered burrowing owl and its habitats are less than significant under CEQA, and no mitigation measures are necessary. For VHP-covered activities, Condition 18 of the VHP will replace the protections outlined in BMP GEN-7.

Activities Not Covered under the VHP

With the implementation of BMPs, effects of the Program Renewal on the burrowing owl and its habitat would be minimized. Occupied burrows would be avoided, and the loss of occupied breeding habitat would not occur. Residual effects of non-VHP-covered Program Renewal activities on this species include limited temporary and permanent impacts on suitable nesting and foraging habitat. Because nonbreeding habitats for the burrowing owl are extensively available in the Program Renewal Area vicinity, and implementation of the Program Renewal is not expected to remove or degrade large areas of nonbreeding habitat or high-quality habitat such that the regional population of this species would be impacted,

Program Renewal impacts on nonbreeding habitat for the burrowing owl are considered less than significant under CEQA, and no mitigation measures are necessary.

SUMMARY AND CONCLUSION

The Program Renewal could result in impacts on breeding and nonbreeding burrowing owls and their habitats. As the availability of grassland habitat used for nesting in the Program Renewal Area continues to dwindle because of development, the South Bay breeding population of burrowing owls faces extirpation caused by lack of sufficient suitable nesting and breeding-season foraging habitat and isolation from other populations and habitat areas. Therefore, impacts to individual burrowing owls (at any time of year) and occupied breeding habitats resulting from the Program Renewal that result in a substantial (i.e., population-level) effect would contribute to the broader-scale decline in regional burrowing owl populations, and would be considered significant under CEQA. Because nonbreeding habitats for the burrowing owl are extensively available in the Program Renewal Area vicinity, Program Renewal impacts on nonbreeding habitat for the burrowing owl are considered less than significant under CEQA. No mitigation measures are necessary.

With the implementation of BMPs, compliance with VHP conditions, and payment of VHP fees, impacts of VHP-covered Program Renewal activities on the burrowing owl and its habitat are less than significant under CEQA, and no mitigation measures are necessary.

With the implementation of BMPs, effects of the Program Renewal on individual burrowing owls and their habitat would be avoided and minimized. No loss of occupied nesting habitat or disturbance of breeding or nonbreeding individuals would occur under the Program Renewal, as occupied burrows would be avoided. Residual effects of non-VHP-covered Program Renewal activities on this species include limited temporary and permanent impacts on suitable (unoccupied) nesting and foraging habitat. Because habitats for the burrowing owl are extensively available in the Program Renewal Area vicinity, and implementation of the Program Renewal is not expected to remove or degrade large areas of habitat or high-quality habitat such that the regional population of this species would be impacted, Program Renewal impacts on habitat for the burrowing owl are considered less than significant under CEQA. No mitigation measures are necessary.

Impact BIO-1S: Impacts on the Golden Eagle and Bald Eagle (Less than Significant)

IMPACT ASSESSMENT

The golden eagle, a state fully protected species, nests in small numbers along the edges of the Santa Clara Valley within the Program Renewal Area, and more widely in the foothills of the Diablo Range and Santa Cruz Mountains. Breeding and nonbreeding individuals forage regularly on the periphery of the Program Renewal Area where areas of natural habitat occur adjacent to much larger expanses of open habitat.

The bald eagle, a state endangered and fully protected species, nests in Santa Clara County in more than 10 locations, and numbers have been increasing in recent years. Small numbers also occur as nonbreeding visitors, typically at reservoirs on either side of the Santa Clara Valley but occasionally in Coyote Valley as well.

As described under “Impacts on Common and Special-Status Fish and Wildlife” above, maintenance activities may result in direct and indirect effects on birds in the Program

Renewal Area due to direct and indirect disturbance of individuals and temporary or permanent impacts on suitable habitat. Maintenance activities are not expected to result in the loss of nesting sites for either of these two eagle species; however, in the absence of BMPs, activities causing a substantial increase in noise or visual disturbance near active nest locations could result in nest abandonment, and possibly the loss of eggs or young as a result. Such activities may also disturb roosting and foraging individuals, which would likely move out of the area. Due to the sensitivity of these species and the small numbers of pairs that breed in the Program Renewal Area, the loss of individual eagles and/or the abandonment of a nesting territory due to disturbance of nest locations that result in a substantial (i.e., population-level) effect would be considered significant under CEQA. However, the disturbance of foraging individuals would be negligible.

Small mammal control may reduce prey availability for golden eagles, but such effects would be localized, and because of the low numbers of eagles that forage in Program Renewal impact areas such activities are not expected to result in substantial changes in prey availability that would affect golden eagle populations. Program Renewal impacts on fish would similarly have very few effects, if any, on bald eagle populations because these birds forage very little, if at all, along creeks in the Program Renewal Area, and instead forage primarily at reservoirs.

The introduction of nonnative vegetation would degrade suitable habitat for bald and golden eagles in the Program Renewal Area. Adverse effects on water quality and fish, including mercury mobilization, may also reduce the suitability of foraging habitat for bald eagles. However, because gold eagles and bald eagles only forage occasionally within Program Renewal Areas, such impacts would be extremely limited and are considered less than significant under CEQA.

Based on the scarcity of breeding individuals in the Program Renewal Area, bald and golden eagles are expected to forage only very infrequently and within a small subset of open habitats in Program Renewal work areas. Even nonbreeding individuals do not frequently forage in Program Renewal work areas. Nevertheless, because these species forage in open habitats (as opposed to dense riparian areas), maintenance activities would help to maintain suitable foraging habitat for bald and golden eagles within work areas, to the extent that eagles might use the Program Renewal Area at all. Further, the majority of any Program Renewal impacts on foraging habitat for bald and golden eagles would be temporary, as disturbed areas will typically restore to existing conditions or be revegetated following the work. However, some permanent impacts could occur where activities such as bank stabilization result in modifications to natural areas. Because only very few individual bald and golden eagles are expected to forage in Program Renewal work areas, and would do so infrequently, implementation of the Program Renewal is not expected to reduce foraging habitat for a nesting pair or affect nest productivity. Thus, Program Renewal impacts on habitat for the bald eagle and golden eagle are considered less than significant under CEQA.

Applicable Best Management Practices and VHP Conditions

Valley Water will implement a number of BMPs to protect biological resources in the Program Renewal Area, including following BMPs to reduce impacts on the golden eagle and bald eagle:

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** will minimize the exposure of soils containing mercury in portions of the Guadalupe River watershed affected by historic mercury mining.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread of Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-20: Hazard Tree Removal** will ensure that no tree known to be occupied by a bald eagle or golden eagle nest that was active within the prior five years would be removed under the Program Renewal.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and appropriate protective measures for bald eagles and golden eagles.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of the bald eagle and golden eagle within the Program Renewal Area, as these species are not covered under the VHP. Nevertheless, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the bald eagle and golden eagle and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on the bald eagle and golden eagle and their habitats in the Program Renewal Area:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species as well as fully protected species, including the bald eagle and golden eagle.
- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts in the Program Renewal Area; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management that would benefit a variety of native species, including bald and golden eagles.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved, although neither eagle species would be covered by the VHP. With implementation of BMPs to avoid the loss or disturbance of active nests of these species as well as the removal of trees known to be occupied by an active bald or golden eagle nest within the prior three years, impacts of VHP-covered Program Renewal activities on individual bald eagles and golden eagles are less than significant under CEQA. No mitigation measures are necessary.

Residual effects of VHP-covered Program Renewal activities on bald eagles and golden eagles include temporary and permanent impacts on suitable nesting and foraging habitat, as well as the indirect disturbance of foraging individuals by maintenance personnel and equipment. As discussed above, these impacts would be less than significant under CEQA. Because only very few individuals are expected to forage in Program Renewal work areas, and would do so infrequently, implementation of the Program Renewal is not expected to remove or degrade large areas of habitat such that the regional populations of these species would be impacted. Thus, Program Renewal impacts on habitat for the bald eagle and golden eagle are considered less than significant under CEQA, and no mitigation measures are necessary. Implementation of BMPs and compliance with VHP conditions will further reduce VHP-covered Program Renewal impacts on habitats for these species.

In addition, Valley Water will pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. The Program Renewal's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit the bald eagle and golden eagle, which are known to nest and occur in existing Habitat Agency reserves. Because golden eagles make greater use of the upland habitats that are targeted by the VHP, whereas bald eagles would use the reserves for occasional nesting and limited foraging, Habitat Agency reserves are expected to have proportionally greater benefit to golden eagles compared to bald eagles. As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly "covered species" under the VHP. This conclusion is supported based on the potential suitability of reserve habitat for nesting and foraging bald eagles and golden eagles. Thus, payment of VHP fees would reduce impacts on habitat for the bald eagle and golden eagle.

Activities Not Covered under the VHP

Non-VHP-covered maintenance activities located throughout the Program Renewal Area can result in adverse effects on the bald eagle and golden eagle, as well as nesting and foraging habitat for these species. With implementation of BMPs to avoid the loss or disturbance of active nests, or the removal of trees known to be occupied by an active bald or golden eagle nest within the prior three years, impacts of non-VHP-covered Program Renewal activities on individual bald eagles and golden eagles are less than significant under CEQA. No mitigation measures are necessary.

Residual effects of non-VHP-covered Program Renewal activities on bald eagles and golden eagles include temporary and permanent impacts on suitable nesting and foraging habitat, as well as the indirect disturbance of foraging individuals by maintenance personnel and equipment. As discussed above, these impacts would be less than significant under CEQA. Because only very few individuals are expected to forage in Program Renewal work areas, and would do so infrequently, implementation of the Program Renewal is not expected to remove or degrade large areas of habitat such that the regional populations of these species would be impacted. Thus, non-VHP-covered Program Renewal impacts on habitat for the bald eagle and golden eagle are considered less than significant under CEQA, and implementation of BMPs will reduce non-VHP-covered Program Renewal impacts on habitats for these species. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

Program Renewal activities would result in significant impacts on bald eagles and golden eagles due to the loss of individuals if substantial (i.e., population-level) effects occur. For all Program Renewal activities (regardless of VHP coverage), BMPs will avoid the loss or disturbance of active nests of these species as well as the removal of trees known to be occupied by an active nest within the prior three years. Because only very few individuals are expected to forage in Program Renewal work areas, and would do so infrequently, implementation of the Program Renewal (regardless of VHP coverage) is not expected to remove or degrade large areas of habitat such that the regional populations of these species would be impacted. Thus, Program Renewal impacts on habitat for the bald eagle and golden eagle are considered less than significant under CEQA, regardless of VHP coverage. No mitigation measures are necessary.

For all Program Renewal activities (regardless of VHP coverage), implementation of BMPs to reduce habitat impacts would reduce impacts on habitats for bald eagles and golden eagles. For VHP-covered activities, compliance with applicable VHP conditions and payment of all VHP impact fees would further reduce impacts on habitats for these species.

Impact BIO-1T: Impacts on the Yellow Warbler (Less than Significant with Mitigation)

IMPACT ASSESSMENT

The yellow warbler, a California species of special concern, is a widespread but uncommon breeder in riparian habitats throughout the Program Renewal Area. The species breeds in very low numbers along the lower reaches of South Bay streams, being somewhat more common in the upper reaches of the cottonwood/willow-dominated zone and occasionally in riparian habitats dominated by sycamores, alders, and other species as well. In southern Santa Clara County, yellow warblers have been recorded nesting in riparian habitat along

Llagas, Uvas/Carnadero, and Pacheco Creeks, as well as along the Pajaro River. Yellow warblers from populations elsewhere in North America are abundant migrants throughout the Program Renewal Area during spring and fall.

As discussed under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on birds in the Program Renewal Area due to direct and indirect disturbance and temporary or permanent impacts on suitable habitat. In addition, individuals of these species (especially eggs or young in nests) may be killed or injured during maintenance activities due to crushing by construction personnel or equipment. Activities causing a substantial increase in noise or visual disturbance near active nest locations may result in nest abandonment, and possibly the loss of eggs or young as a result. Such activities may also disturb roosting and foraging individuals, which would likely move out of the area. Human disturbance, leading to reduced attendance of nests, could also potentially increase the risk of brood parasitism of yellow warbler nests by brown-headed cowbirds. Due to the rarity of the yellow warbler in the region and the temporal and geographic extent of the Program Renewal (which could affect a relatively high number of individuals over the 10-year period), the loss of individuals of this species due to Program Renewal activities that result in a substantial (i.e., population-level) impact would be considered significant under CEQA.

Maintenance activities within suitable riparian habitat may also result in the temporary and permanent loss or modification of riparian habitat used for nesting by the yellow warbler. The introduction of nonnative vegetation could also degrade riparian habitats used by this species. Maintenance activities that result in the removal or modification of upland vegetation adjacent to riparian habitat may also affect an area's value as foraging habitat for the yellow warbler. Because this species often nests fairly low in trees, removal of the lower limbs of trees ("limbing up") would remove nesting habitat for this species.

Because of the widespread and often patchy nature of high-quality nesting habitat for yellow warblers in the Program Renewal Area, suitable habitat for the yellow warbler is not mapped for this analysis. High-quality nesting habitat for this species consists of riparian woodlands, often with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007c). Riparian areas with reduced understory resulting from grazing or disturbance are generally not used for nesting, and riparian corridors lacking open ruderal or herbaceous vegetation along the edges, or with development up to the corridor edge, are often avoided as well. Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within woody riparian habitats in the Program Renewal Area (91 acres), a subset of which provide nesting habitat that is occasionally used by yellow warblers. Individual yellow warblers can forage in vegetated habitats throughout the Program Renewal Area. The majority of estimated Program Renewal impacts to riparian habitat (86 acres, or 95 percent) are expected to be temporary, as disturbed areas will typically be revegetated following maintenance activities. However, some permanent impacts will occur where activities such as bank stabilization and hazard tree removal result in modifications to natural areas. Due to this species' rarity in the region and the potential for maintenance activities to affect a relatively large area of the species' nesting habitat, the loss of riparian habitat providing suitable nesting and foraging habitat for this species may have a substantial impact on local and regional populations of the species and would be considered significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to reduce impacts on the yellow warbler:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as appropriate protective measures for active nests.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of the yellow warbler within the Program Renewal Area, as this species is not covered under the VHP. However, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on riparian habitats used by yellow warblers:

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management that would benefit a variety of native species, including the yellow warbler.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved, although the yellow warbler would not be a VHP-covered species. With the implementation of Program Renewal BMPs to ensure that active nests of yellow warblers are avoided by maintenance activities, impacts of VHP-covered Program Renewal activities on individual yellow warblers would be effectively avoided and minimized, and these impacts are less than significant under CEQA. Residual effects of VHP-covered Program Renewal activities on individuals include the limited indirect disturbance of foraging individuals by maintenance personnel and equipment. Such impacts would be less than significant under CEQA, and no mitigation measures are necessary.

Due to the rarity of nesting yellow warblers in the region and the potential for maintenance activities to affect a relatively large area of the species' nesting habitat, the loss of riparian habitat providing suitable nesting habitat for this species may have a substantial impact on local and regional populations of the species and would be considered significant under CEQA. Valley Water will pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. The Program Renewal's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit the yellow warbler, which is expected to occur in existing Habitat Agency reserves (which target riparian habitats). As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly "covered species" under the VHP. This conclusion is supported for the yellow warbler based on the species' occurrence in riparian habitats throughout Santa Clara County, including those in Habitat Agency reserves. Thus, with the payment of VHP land cover fees and specialty fees for impacts to riparian habitats, effects of the Program Renewal on nesting habitat for the yellow warbler would be less than significant under CEQA. No mitigation measures are necessary.

Activities Not Covered under the VHP

No maintenance activities within tidal portions of the Program Renewal Area will result in adverse effects on the yellow warbler or its habitat, as this species does not occur within tidal habitats in the Program Renewal Area. For other non-VHP-covered maintenance activities, with the implementation of Program Renewal BMPs to ensure that active nests of yellow warblers are avoided by maintenance activities, impacts on individual yellow warblers would

be less than significant under CEQA. Residual effects of non-VHP-covered Program Renewal activities on individuals include the limited indirect disturbance of foraging individuals by maintenance personnel and equipment. Such impacts would be less than significant under CEQA. No mitigation measures are necessary.

Although BMPs would reduce the magnitude and extent of non-VHP-covered Program Renewal impacts on the yellow warbler and its habitats, substantial impacts on this species would remain due to the temporary and permanent loss of nesting habitat. Due to the patchy breeding distribution of this species in Santa Clara County, it is impossible to determine the extent to which Program Renewal activities would impact this species' populations or use of riparian habitat in the Program Renewal Area. Nevertheless, the Program Renewal would result in the loss or modification of large areas of woody riparian habitat used for nesting and adjacent herbaceous streambank vegetation used for foraging by nesting individuals over the 10-year period. Because of the rarity of this species in the region, as well as the limited availability of high-quality nesting habitat in the Program Renewal Area, such impacts would be significant under CEQA.

Mitigation Measure BIO-12, described under Impact BIO-2A below, requires Valley Water to provide compensatory mitigation for impacts to riparian habitats. The riparian planting and restoration Program Renewal would provide high-quality riparian habitat along Valley Water-maintained streams. However, such riparian habitat mitigation may not benefit the yellow warbler if it is located in areas where the species would not breed. Mitigation Measure BIO-10 below would be implemented to reduce Program Renewal impacts on the yellow warbler to a less-than-significant level by restoring habitat suitable for use by this species, thereby ensuring that the Program Renewal does not substantially reduce the number or restrict the range of this rare species.

Mitigation Measure BIO-10: Compensatory Mitigation Impacts on Yellow Warbler Breeding Habitat

For impacts to occupied yellow warbler breeding habitat (i.e., riparian habitat known to have been occupied in recent years by the species) in areas not located in an existing PMA for the activity being performed, Valley Water's implementation of Mitigation Measure BIO-12 will be required to be located in areas where riparian habitat creation, restoration, and preservation will benefit yellow warblers (e.g., in relatively undeveloped reaches of creeks rather than in creeks surrounded closely on both sides by development), such that mitigation according to these measures occurs at a ratio of no less than 1:1 (on an acreage basis). Valley Water will determine whether impacted riparian habitat is suitable for this species on the basis of breeding-season surveys or comparison of habitat conditions to those in known occupied areas.

SUMMARY AND CONCLUSION

Program Renewal activities can result in significant impacts on yellow warblers due to the loss of individuals. For all Program Renewal activities (regardless of VHP coverage), BMPs will avoid the loss or disturbance of active nests of this species. With the implementation of BMPs, impacts on individual yellow warblers are less than significant under CEQA. Residual effects on individuals of this species include the limited indirect disturbance of foraging individuals by maintenance personnel and equipment. Such impacts would be less than significant under CEQA, and no mitigation measures are necessary.

Because foraging habitats for the yellow warbler and are extensively available in the Program Renewal Area, and implementation of the Program Renewal is not expected to remove or degrade large areas of foraging habitat such that regional populations of these species would be impacted, Program Renewal impacts on foraging habitat for the yellow warbler are also considered less than significant under CEQA, regardless of VHP coverage, and no mitigation measures are necessary. Implementation of BMPs and, for VHP-covered activities, compliance with VHP conditions to minimize impacts on riparian habitats would reduce these impacts.

Due to the rarity of nesting yellow warblers in the region and the potential for maintenance activities to affect a relatively large area of the species' nesting habitat, the loss of riparian habitat providing suitable nesting habitat for this species may have a substantial impact on local and regional populations of the species and would be considered significant under CEQA. For VHP-covered activities, Valley Water will pay VHP land cover fees and specialty fees to reduce effects of the Program Renewal on nesting habitat for the yellow warbler to less than significant levels under CEQA. For non-VHP-covered activities, Valley Water will implement Mitigation Measure BIO-10 to provide high-quality riparian habitat along Valley Water-maintained streams and reduce this impact to less than significant levels under CEQA.

Impact BIO-1U: Impacts on the San Francisco Dusky-Footed Woodrat (Less than Significant)

IMPACT ASSESSMENT

The San Francisco dusky-footed woodrat is a California species of special concern that is locally common in undisturbed areas of woodland, scrub, or riparian habitats with dense understory or thick scrub for cover in the Program Renewal Area. This species is known to occur more regularly along less urbanized reaches of a number of streams in the Program Renewal Area, as well as in rural and natural areas on the Valley floor and in the foothills of the Santa Cruz Mountains and the Diablo Range.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in the injury or mortality of dusky-footed woodrats because of equipment use, vehicle traffic, and worker foot traffic, particularly when stick nests are disturbed or removed by those activities. In addition, animal conflict management (e.g., poisoning or trapping) can adversely affect woodrats where they occur. Suitable nesting and foraging habitat and woodrat nests may be directly lost as a result of clearing and grading for bank stabilization, stream access, or vegetation management activities. Vegetation management can also reduce vegetation density and therefore reduce the quality of suitable habitat for woodrats or cause an area to be unsuitable for occupation by this species.

Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within habitats for San Francisco dusky-footed woodrats. Maintenance activities affecting a subset of woody riparian habitat (91 acres), as well as adjacent non-developed uplands (5,318 acres) where woody vegetation and trees are present, could affect nesting habitat for this species. Woodrats can also forage in adjacent herbaceous streambank vegetation (4,888 acres) throughout the Program Renewal Area. The majority of estimated Program Renewal impacts to woodrat habitat are expected to be temporary, as disturbed areas will typically be revegetated following maintenance activities. However, some permanent impacts will occur where activities such as bank stabilization and hazard tree

removal result in modifications to natural areas. Program Renewal impacts on suitable nesting and foraging habitat for the San Francisco dusky-footed woodrat would be considered less than significant under CEQA because this species' habitats are widespread in the Program Renewal Area, and Program Renewal impacts on suitable habitat would not reduce the species' regional populations.

Program Renewal activities could result in the loss of many nests and individuals of this species due to the localized high abundance of woodrats in certain portions of the Program Renewal Area, as well as its relatively broad distribution. A total of 33 woodrat nests were relocated from 2014–2023 under SMP-2; however, all of these nests were relocated as part of the invasive plant management Program Renewal. Nevertheless, for the purpose of the Program Renewal, a conservative estimate of up to 70 woodrat nests requiring relocation is assumed. Indirect impacts may also occur as a result of over-crowding (as individuals move out of work areas to areas that are occupied by conspecifics) and increased risk of predation. Populations may also be fragmented if extensive areas of suitable habitat are cleared. Due to the species' regional abundance and high reproductive capabilities, Program Renewal impacts on dusky-footed woodrats would not have a substantial effect on regional populations. However, woodrats are very important ecologically in that they provide an important prey source for raptors (particularly owls) and for predatory mammals, and their nests also provide habitat for a wide variety of small mammals, reptiles, and amphibians. As a result, the loss of large numbers of woodrats and their nests would be a substantial (i.e., population-level) impact on wildlife communities, and would be considered significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to reduce impacts on the San Francisco dusky-footed woodrat and its habitats:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including riparian habitats) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-17: Protection of the San Francisco Dusky-Footed Woodrat** requires a pre-activity survey prior to work that could result in disturbance of woodrats and their nests, the protection of any individuals found, and relocation of woodrat nests if avoidance is not feasible.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of the San Francisco dusky-footed woodrat.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of the San Francisco dusky-footed woodrat in the Program Renewal Area, as this species is not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). This species is not expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the San Francisco dusky-footed woodrat and its habitats (e.g., by minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on aquatic habitats.

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats for the San Francisco dusky-footed woodrat in the Program Renewal Area, including specialty fees for impacts to riparian and wetland habitats; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management that would benefit a variety of native species, including the woodrat.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

With the implementation of Program Renewal BMPs to ensure that woodrat nests are avoided or relocated prior to the start of work activities, impacts of VHP-covered Program Renewal activities on individual San Francisco dusky-footed woodrats would be less than significant under CEQA. Program Renewal impacts on suitable nesting and foraging habitat for the San Francisco dusky-footed woodrat would be considered less than significant under CEQA because this species' habitats are widespread in the Program Renewal Area, and Program Renewal impacts on suitable habitat would not reduce the species' regional populations. The implementation of Program Renewal BMPs to avoid and minimize impacts on suitable habitats would reduce these impacts. No mitigation measures are necessary.

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved, although the San Francisco dusky-footed woodrat would not be a VHP-covered species. Valley Water will pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. The Program Renewal's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit the San Francisco dusky-footed woodrat, as this

species is widespread in the Program Renewal Area and suitable habitat for the species is present in existing Habitat Agency reserves. As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly "covered species" under the VHP. This conclusion is supported for the San Francisco dusky-footed woodrat based on the relatively wide distribution of the species in Santa Clara County. Thus, with the payment of VHP land cover fees and specialty fees for impacts to riparian habitats and other land cover types that potentially support this species, effects of the Program Renewal on habitat for the San Francisco dusky-footed woodrat would be reduced

Activities Not Covered under the VHP

No Program Renewal impacts within tidal portions of the Program Renewal Area would result in impacts on the San Francisco dusky-footed woodrat, as this species does not occur in tidal habitats. Other non-VHP-covered Program Renewal activities could result in adverse effects on the San Francisco dusky-footed woodrat and its habitats. With the implementation of Program Renewal BMPs to ensure that woodrat nests or avoided or relocated prior to the start of work activities, impacts of non-VHP-covered Program Renewal activities on individual San Francisco dusky-footed woodrats would be less than significant under CEQA. Program Renewal impacts on suitable nesting and foraging habitat for the San Francisco dusky-footed woodrat would be considered less than significant under CEQA because this species' habitats are widespread in the Program Renewal Area, and Program Renewal impacts on suitable habitat would not reduce the species' regional populations. No mitigation measures are necessary; however, mitigation provided under Mitigation Measure BIO-12 would benefit this species if the mitigation occurs where populations of woodrats are present through enhancement or creation of woody riparian habitat that the species is dependent on.

SUMMARY AND CONCLUSION

Program Renewal activities could result in significant impacts on San Francisco dusky-footed woodrats due to the loss of individuals. For all Program Renewal activities (regardless of VHP coverage), BMPs will avoid the loss or disturbance of active nests of this species. With the implementation of BMPs, impacts on individual San Francisco dusky-footed woodrats are less than significant under CEQA. No mitigation measures are necessary.

Program Renewal impacts on suitable nesting and foraging habitat for the San Francisco dusky-footed woodrat would be considered less than significant under CEQA because this species' habitats are widespread in the Program Renewal Area, and Program Renewal impacts on suitable habitat would not reduce the species' regional populations. For all Program Renewal activities (regardless of VHP coverage), the implementation of Program Renewal BMPs to avoid and minimize impacts on suitable habitats would reduce these impacts. For VHP-covered activities, compliance with applicable VHP conditions and payment of VHP impact fees would further reduce VHP-covered Program Renewal impacts on habitats for San Francisco dusky-footed woodrats. No mitigation measures are necessary.

Impact BIO-1V: Impacts on the Pallid Bat, Townsend's Big-Eared Bat, and Non-Special-Status Bats (Less than Significant with Mitigation)

The pallid bat, the Townsend's big-eared bat, and non-special-status bats are assessed together because these species roost in similar habitats in the Program Renewal Area (i.e., trees and structures), impacts of maintenance activities on these species would be similar,

and impacts on individuals of these species are considered significant under CEQA and would require similar mitigation.

IMPACT ASSESSMENT

The pallid bat (a California species of special concern) occurs sporadically throughout the Program Renewal Area. Maternity colonies have been documented at several locations in the Program Renewal Area. The species may also occur in or near open space or less-developed areas around the periphery of the Valley floor. Maintenance activities could result in direct and indirect effects on active roosts of pallid bats, as there is some (albeit very low) potential for this species to roost in maintenance activity work areas.

The Townsend's big-eared bat (a California species of special concern) is a rare resident in the Program Renewal Area, and there are no known locations of this species on the Santa Clara Valley floor. Roosting colonies are known from United Technologies Corporation Property east of Coyote Ridge near Metcalf Road and at Almaden-Quicksilver County Park. These records indicate the potential for this species to occur in suitable habitat in the Program Renewal Area, possibly near southern Coyote Ridge and northern Anderson Reservoir or in the Guadalupe Mines area. Maternity roosts are not known or expected to occur on the Valley floor. Maintenance activities will not directly remove or modify any trees or structures providing suitable roosting habitat for the Townsend's big-eared bat, and impacts of the Program Renewal on this species are limited to the potential indirect disturbance of nonbreeding roosts supporting small numbers of individuals.

Common bat species such as the Mexican free-tailed bat, big brown bat, Yuma myotis, California myotis, and possibly other species may also roost in trees and structures throughout the Program Renewal Area. Roost types may include maternity and non-maternity roosts, and numbers of roosting individuals may vary from small (e.g., single individuals) to large (e.g., 10–20 individuals or greater).

The Program Renewal includes the removal of trees that could provide roosting sites for bats. Anticipated tree removal impacts over the 10-year Program Renewal are as follows:

- An unlimited number of hazard trees, regardless of size.
- Up to 150 non-hazard trees greater than 12 inches dbh
- Up to 2,000 non-hazard trees less than 12 inches dbh

Table 3.4-5 provides estimates of the extent of tree removal impacts, which include the removal of up to 5 acres of trees greater than 6 inches dbh, and the removal of up to 137 acres of trees and other vegetation less than 6 inches dbh.

When trees containing roosting colonies or individual bats are removed or modified, individual bats can be physically injured or killed, subjected to physiological stress resulting from being disturbed during torpor, or face increased predation because of exposure during daylight. In addition, nursing young may be subjected to disturbance-related abandonment by their mothers. Program Renewal-related disturbance in close proximity to a maternity roost potentially could cause females to abandon their young.

Due to the rarity of pallid bats and Townsend's big-eared bats in the region, impacts resulting in the injury or mortality of one or more individuals (including the abandonment of young

due to disturbance) of these species such that a substantial effect on regional populations occurs would be considered significant under CEQA. Impacts due to the loss of a roost site, either due to direct removal or indirect disturbance that results in abandonment, supporting a small nonbreeding roost of pallid bats or Townsend's big-eared bats, defined as fewer than five individuals, would not be considered significant under CEQA, as such roost sites are widely available in the region. However, the loss of an occupied roost site (including roosts located in trees or nearby structures), either due to direct removal or indirect disturbance that results in abandonment, supporting an active maternity roost of any size, or a nonbreeding roost of five or more individuals, would be considered significant under CEQA because these species are selective about their roost locations, and occupied roosts supporting five or more individuals of these species are uncommon regionally and of high importance to local populations.

For non-special-status bat species, impacts resulting in the injury or mortality (including the abandonment of young due to disturbance) of 10 big brown bats or at least 20 individuals of other non-special-status bats may also have a substantial effect on regional populations and would be significant under CEQA. The direct removal of an occupied roost supporting 10 big brown bats or at least 20 individuals of other non-special-status bats would also be significant under CEQA due to the limited availability of larger roost locations in the Program Renewal Area. The removal of locations supporting smaller roosts would be considered less than significant under CEQA, as such smaller roost locations are much more widely available regionally. The indirect disturbance of a colony of non-special-status roosting bats that does not result in the mortality of individuals would be considered less than significant under CEQA, as bats are expected to be able to use an alternative roost temporarily, and maintenance activities at a given location would be limited in duration, allowing the bats to return and reoccupy the roost once work is complete.

The loss of high-quality roosting sites for bats could result from the removal of large trees (i.e., trees greater than 12 inches dbh), which are more likely to support cavities that could be used by colonies of roosting bats compared to smaller trees. This is especially true for the removal of hazard trees, which if they are old or rotten may be more likely to support large cavities compared to younger, healthier trees. The removal of trees less than 12 inches dbh, including hazard trees, can also potentially result in the loss of roosting sites for bats, although the number of roosting bats potentially supported by cavities and crevices in these smaller trees would be lower. Trees less than 6 inches dbh are less likely to support roosting bats compared to trees greater than 6 inches dbh because they would support fewer suitable cavities (if any), and they are not expected to support more than a few individual roosting bats due to a lack of large, well-developed cavities.

However, the removal of hazard trees would only result in the removal of trees expected to fail imminently, or in the or in the next 5 to 10 years. Thus, these trees would be lost even in the absence of Program Renewal activities. Further, the removal of hazard trees would reduce the potential for the spread of pathogens, which could result in the loss of even more bat roosting habitat and would reduce the potential for an unhealthy tree to kill or damage a bat roost in a nearby tree, which is a beneficial effect. Thus, the primary loss of roosting habitat that would occur as a result of the Program Renewal would be due to the removal non-hazard trees greater than 12 inches dbh. However, such trees supporting unoccupied but potentially suitable roosting sites for bats are widely available in the region, and thus the removal of these trees is considered less than significant under CEQA.

Herbicides used for vegetation management may deplete invertebrate prey for bats in the Program Renewal Area due to the reduction of vegetation that these prey species depend on. Maintenance activities, particularly vegetation management, may degrade habitat for bats, and may maintain habitat in a reduced-quality state so that it supports fewer individuals over the long term. The introduction of nonnative vegetation would also degrade suitable habitat for bats in the Program Renewal Area. However, because of the relatively small amount of foraging habitat for roosting bats that would be affected by the Program Renewal relative to the extent of such habitat that is available in the region, impacts on foraging habitat for these species would be relatively limited, and would be considered less than significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to reduce impacts on roosting bats and their habitats:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including riparian habitats) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-16: Protection of Bats and Bat Colonies** requires a pre-activity survey prior to work within 100 feet of suitable bat habitat, protective measures as recommended by a qualified biologist, and consultation with CDFW if a colony must be removed or physically disturbed.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of roosting bats.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of bats in the Program Renewal Area, as these species are not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). These species are also not expected to be covered under the VHP in the future. However, for VHP-covered activities, compliance with habitat plan conditions will reduce impacts on roosting bats and their habitats (e.g., by minimizing

habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on habitats for roosting bats:

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats for roosting bats in the Program Renewal Area; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management that would benefit a variety of native species, including bats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved, although no bats would be covered species under the VHP. Valley Water will implement BMPs to protect active roosts on and within 100 feet of work areas. Residual effects of VHP-covered Program Renewal activities on roosting bats include the removal of occupied roost locations (where avoidance is not feasible), the removal of suitable unoccupied roosting habitat, the removal and modification of foraging habitat, and the beneficial effect of removing unhealthy hazardous trees. However, the loss of an occupied roost, either due to direct removal or indirect disturbance that results in abandonment, supporting a pallid bat maternity colony of any size, a pallid bat nonbreeding roost of five or more individuals, a colony of at least 10 big brown bats, or a colony of at least 20 individuals of other non-special-status bats would be considered significant under CEQA. The indirect disturbance of a Townsend's big-eared bat maternity colony of any size, or a nonbreeding roost of five or more individuals, that results in abandonment would also be considered significant under CEQA. Mitigation Measure BIO-11 below would be implemented to reduce VHP-covered Program Renewal impacts on roosting bats to a less-than-significant level by creating habitat suitable for roosting by these species and monitoring to ensure the roost becomes occupied, thereby ensuring that the Program Renewal does not reduce large occupied roosts in the Program Renewal Area.

Impacts on unoccupied roosting habitat for bats, as well as foraging habitat, would be less than significant under CEQA, and no mitigation measures are necessary. The implementation of Program Renewal BMPs to minimize impacts would reduce this impact. In addition, Valley Water will pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. The Program Renewal's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit common and special-status roosting bats, which are expected to roost and forage in existing Habitat Agency reserves. As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly

"covered species" under the VHP. This conclusion is supported for roosting bats based on the presence of suitable oak woodland, riparian, and other high-quality habitats for bat species in Habitat Agency reserves. However, because the management of Habitat Agency reserves does not target providing/increasing occupied roosts, the benefits to bats provided by reserves would primarily consist of providing high-quality foraging opportunities, rather than replacing roosts that may be lost from covered activities. Thus, with the payment of VHP land cover fees for impacts to land cover types that potentially support these species, effects of the Program Renewal on foraging habitat for roosting bats would be reduced.

Mitigation Measure BIO-11: Provide Alternative Bat Roost

If an occupied roost supporting a pallid bat or Townsend's big-eared bat maternity colony of any size, a pallid bat or Townsend's big-eared bat nonbreeding roost of five or more individuals, a colony of at least 10 big brown bats, or a colony of at least 20 individuals of other non-special-status bats is to be removed by the Program Renewal, Valley Water will retain a qualified biologist to design and determine an appropriate location for an alternative roost structure.

The qualified biologist will determine an appropriate location for the alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity. The roost structure will be built to specifications as determined by a qualified biologist, or it may be purchased from an appropriate vendor. The structure will be placed as close to the impacted roost site as feasible. Valley Water will monitor the roost for up to 3 years (or until occupancy is determined, whichever occurs first) to determine use by bats. If by Year 3 bats are not using the structure, a qualified bat biologist, in consultation with the CDFW, will identify alternative roost designs or locations for placement of the roost, and monitoring of the new roost will occur for an additional 3 years (or until occupancy by bats has been verified).

Activities Not Covered under the VHP

Maintenance activities within tidal portions of the Program Renewal Area will not result in adverse effects on roosting bats, as bats do not roost within tidal reaches of the Program Renewal Area. Program Renewal activities within tidal areas may affect foraging habitat for bats; however, due to the widespread availability for foraging habitat for bats (especially in tidal portions of the Program Renewal Area, which are adjacent to expansive marshes), such impacts would be negligible.

Other non-VHP-covered Program Renewal activities can result in adverse effects on roosting bats, as well as roosting and foraging habitat for these species. With the implementation of BMPs, direct and indirect impacts on individuals would be avoided unless the removal or disturbance of a tree or structure in which the bats are roosting cannot be avoided, and impacts on unoccupied roosting habitat as well as foraging habitats would be reduced. Residual effects of non-VHP-covered Program Renewal activities on bats include the removal of occupied roost locations (where avoidance is not feasible), the removal of suitable unoccupied roosting habitat, the removal and modification of foraging habitat, and the beneficial impact of removing unhealthy hazardous trees. As discussed above, impacts on unoccupied roosting habitat for bats, as well as foraging habitat, would be less than significant under CEQA, and no mitigation measures are necessary. However, the loss of an occupied roost, either due to direct removal or indirect disturbance that results in

abandonment, supporting a pallid bat maternity colony of any size, a pallid bat nonbreeding roost of five or more individuals, a colony of at least 10 big brown bats, or a colony of at least 20 individuals of other non-special-status bats would be considered significant under CEQA. The indirect disturbance of a Townsend's big-eared bat maternity colony of any size, or a nonbreeding roost of five or more individuals, that results in abandonment would also be considered significant under CEQA.

Mitigation Measure BIO-11 would be implemented to reduce non-VHP-covered Program Renewal impacts on roosting bats to a less-than-significant level by creating habitat suitable for roosting by these species and monitoring to ensure the roost becomes occupied, thereby ensuring that the Program Renewal does not reduce large, occupied roosts in the Program Renewal Area.

SUMMARY AND CONCLUSION

For all Program Renewal activities (regardless of VHP coverage), with the implementation of BMPs, direct and indirect impacts on individual roosting bats would be avoided unless the removal or disturbance of a tree or structure in which the bats are roosting cannot be avoided. Effects of Program Renewal activities on bats also include the removal of suitable unoccupied roosting habitat, the removal and modification of foraging habitat, and the beneficial impact of removing unhealthy hazardous trees. Impacts on unoccupied roosting habitat for bats, as well as foraging habitat, would be less than significant under CEQA, and no mitigation measures are necessary. However, Program Renewal activities can result in significant impacts on roosting bats due to the loss of an occupied roost, either due to direct removal or indirect disturbance that results in abandonment, supporting a pallid bat maternity colony of any size, a pallid bat nonbreeding roost of five or more individuals, a colony of at least 10 big brown bats, or a colony of at least 20 individuals of other non-special-status bats. The indirect disturbance of a Townsend's big-eared bat maternity colony of any size, or a nonbreeding roost of five or more individuals, that results in abandonment would also be considered significant under CEQA. Mitigation Measure BIO-11 would be implemented to reduce Program Renewal impacts on roosting bats to a less-than-significant level by creating habitat suitable for roosting by these species and monitoring to ensure the roost becomes occupied, thereby ensuring that the Program Renewal does not reduce large, occupied roosts in the Program Renewal Area.

The implementation of Program Renewal BMPs to avoid and minimize impacts on suitable habitat, and (for VHP-covered activities) the payment of VHP land cover fees for impacts to land cover types that potentially support these species, effects of the Program Renewal on foraging habitat for roosting bats would be reduced.

Impact BIO-1W: Impacts on the San Joaquin Kit Fox (Less than Significant)

IMPACT ASSESSMENT

In the Program Renewal Area, the San Joaquin kit fox (state threatened and federally endangered) is expected to occur only as an occasional dispersant in the vicinity of Pacheco Creek and the uppermost reaches of the Pajaro River, upstream from the Llagas Creek confluence. Even in those areas, kit fox occurrence is expected to be extremely infrequent, and at most, very low numbers of individuals would move through those areas during dispersal (e.g., between areas of known breeding activity well outside the Program Renewal Area). No maintenance activities are projected in the portion of Santa Clara County where kit

foxes could occur, and Valley Water has easements in only two limited areas in this part of the county. Thus, the San Joaquin kit fox would not be impacted by projected Program Renewal activities, and very low potential would exist for even unprojected activities to impact this species.

However, some possibility exists that unprojected maintenance activities could occur in areas where kit foxes are present. As discussed under "Impacts on Common and Special-Status Wildlife Species" above, maintenance activities could result in the indirect disturbance of individuals due to the presence of human activity, noise, and equipment, potentially causing individuals to move out of the area or abandon a den; and/or trapping individuals in dens due to compaction by equipment or filling of burrows. Such impacts would be highly unlikely, but significant under CEQA if they result in substantial (i.e., population-level) effects.

Based on the scarcity of individual in the Program Renewal Area, San Joaquin kit foxes are expected to occur only very infrequently and within a small subset of open habitats in Program Renewal work areas, if at all. Maintenance activities would have no impact on high-quality habitat for San Joaquin kit foxes; this species does not make substantial use of habitats in the Program Renewal Area, and Program Renewal work areas are subject to periodic human disturbance. Further, the habitats in the Program Renewal Area that would be used by kit foxes (e.g., grasslands), should they occur there, are widely available regionally, and the loss or modification of small areas of these habitats along streams in the Program Renewal Area would not affect regional kit fox populations. Maintenance activities would reduce vegetative cover for kit foxes that may forage or disperse along streams in the Program Renewal Area; however, kit foxes are expected to make only very limited use of these habitats due to their rarity in the county. Due to these combined factors, Program Renewal impacts on habitat for kit foxes would be less than significant.

Small mammal control may reduce prey availability for kit foxes, but such effects would be localized, and because of the low numbers of kit foxes that forage in Program Renewal impact areas such activities are not expected to result in substantial changes in prey availability that would affect kit fox populations.

Applicable Best Management Practices and VHP Conditions

Valley Water will implement the following BMPs to reduce impacts on the San Joaquin kit fox and its habitats:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-19: Avoidance of Impacts on the San Joaquin Kit Fox** requires pre-activity surveys in areas where the species can potentially occur and the avoidance of active dens. The exclusion of San Joaquin kit foxes from dens may occur with authorization from the USFWS and CDFW, but no injury or mortality of kit foxes would occur, and active maternity dens would be avoided. As stated in the BMP, these measures would be implemented for non-VHP-covered activities only.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of the San Joaquin kit fox.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

In addition, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on the San Joaquin kit fox:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species as well as fully protected species, including the San Joaquin kit fox.
- **Condition 18. San Joaquin Kit Fox** requires habitat surveys, preconstruction surveys, and avoidance of occupied dens to avoid all injury to or death of kit foxes, and to minimize harm or harassment. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-19 above.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for San Joaquin kit foxes in Santa Clara County.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With compliance with VHP conditions and payment of VHP fees, impacts of VHP-covered Program Renewal activities on the VHP-covered San Joaquin kit fox and its habitats are less than significant under CEQA, and no mitigation measures are necessary. For VHP-covered activities, Condition 18 of the VHP will replace the protections outlined in BMP GEN-19.

Activities Not Covered under the VHP

No maintenance activities within tidal portions of the Program Renewal Area will result in adverse effects on the San Joaquin kit fox, as this species does not occur within tidal habitats in the Program Renewal Area.

With the implementation of BMPs, effects of the Program Renewal on the San Joaquin kit fox and its habitat would be minimized. Program Renewal activities would avoid active maternity dens, and active non-maternity dens would be avoided to the maximum extent possible. If avoidance is not possible, the exclusion of kit foxes from non-maternity dens could occur with consultation from the CDFW and USFWS. However, the injury or mortality of kit foxes would be avoided. Thus, with the implementation of BMPs, Program Renewal impacts on individuals

are reduced to less than significant levels under CEQA, and no mitigation measures are necessary.

Residual effects of non-VHP-covered Program Renewal activities on this species include temporary and permanent impacts on suitable denning, dispersal, and foraging habitat, as well as the limited indirect disturbance of foraging individuals by maintenance personnel and equipment. Such impacts would be negligible and considered less than significant under CEQA. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

The Program Renewal could result in impacts on breeding and nonbreeding San Joaquin kit foxes and their habitats. With compliance with VHP conditions and payment of VHP fees, impacts of VHP-covered Program Renewal activities on the VHP-covered San Joaquin kit fox are less than significant under CEQA, and no mitigation measures are necessary. For non-VHP-covered activities, with the implementation of BMPs, effects of the Program Renewal on individual San Joaquin kit fox would be effectively minimized, and no injury or mortality of individual kit foxes would occur. Residual effects of non-VHP-covered Program Renewal activities on this species include temporary and permanent impacts on suitable denning, dispersal, and foraging habitat, as well as the limited indirect disturbance of foraging individuals by maintenance personnel and equipment. Such impacts would be negligible and considered less than significant under CEQA. With the implementation of BMPs, and (for VHP-covered activities) compliance with VHP conditions and payment of VHP fees, impacts on habitat for San Joaquin kit foxes are reduced. No mitigation measures are necessary.

Impact BIO-1X: Impacts on the Mountain Lion, American Badger, Ringtail, and Western Red Bat (Less than Significant)

The Central Coast Evolutionarily Significant Unit of the mountain lion, a candidate for listing under CESA, and the American badger, ringtail, and western red bat, which are California species of special concern, are discussed together because Program Renewal impacts on these species would be extremely limited, no BMPs are proposed specifically to reduce impacts on these species, and no mitigation measures are necessary to reduce Program Renewal impacts on these species to less-than-significant levels under CEQA.

IMPACT ASSESSMENT

Mountain lions occur widely and at low densities throughout the Santa Cruz Mountains and Diablo Range in the Program Renewal Area, and individuals occasionally disperse across Valley floor areas. Open lands on the periphery of the Program Renewal Area provide suitable foraging and dispersal habitat for this species, and individuals likely occur in these areas periodically and in low numbers. However, mountain lions are not expected to den or breed along or near Program Renewal Area channels due to periodic human disturbances. Thus, the potential for maintenance activities to affect individuals of this species is extremely low.

The American badger typically occurs in large expanses of annual grasslands, oak woodland savannas, scrublands, and other habitats with stable ground squirrel populations or other fossorial rodents (e.g., gophers). Badgers occur to a lesser extent in agricultural areas, where intensive cultivation inhibits den establishment and reduces prey abundance, but they are known to use these areas for dispersal, and they may den in pastures or fallow fields. In the Program Renewal Area, badgers are known to occur primarily in foothill areas, but they will

periodically disperse across the Valley floor. They are not typically found along riparian or stream edges. Thus, although maintenance activities may occur along the margins of large areas of open habitat, the potential for such activities to disturb a badger or an active badger den would be extremely low.

The status and distribution of the ringtail in the Program Renewal Area is poorly understood. Although this species' strictly nocturnal habits may be at least partially responsible for the lack of information on its distribution in Santa Clara County, it likely is very rare in the Program Renewal Area based on the lack of sightings and the scarcity of roadkill records (e.g., compared to the nocturnal American badger, which is much more frequently detected by roadkills). Ringtails have been recorded in the Program Renewal Area near Lexington Reservoir, near Little Arthur Creek west of Gilroy, and near the confluence of Carnadero Creek and the Pajaro River. Ringtails possibly may be present in small numbers in less developed, wooded areas elsewhere, and ostensibly suitable habitat is present in forested areas at the upper margins of the Program Renewal Area. However, this species likely is scarce throughout the majority of the Program Renewal Area. Thus, the potential for maintenance activities to disturb a ringtail or an active ringtail den would be extremely low.

The western red bat does not breed in the Program Renewal Area, but roosts in the foliage of trees in the Program Renewal Area during winter and migration. This species is strongly associated with intact cottonwood and sycamore valley riparian habitats at low elevations but may roost in trees of many species throughout the Program Renewal Area. Maintenance activities occurring in riparian areas that result in the removal of trees or limbs may result in the disturbance of small numbers of nonbreeding individuals of this species.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on the mountain lion, American badger, ringtail, and western red bat in the Program Renewal Area, as well as foraging and dispersal habitat for all of these species and breeding habitat for the mountain lion, American badger, and ringtail. The physical presence of people and equipment during maintenance activities can result in adverse effects on individual mountain lions, American badgers, ringtails, and western red bats due to the presence of human activity, noise, and equipment, potentially causing individuals to move out of the area or abandon a den (for badgers and ringtails) or roost (for western red bats). Any western red bat that is roosting in a tree to be removed or pruned is expected to flush from the tree before injury or mortality could occur, though bats flushed during the day could suffer increased predation rates, and therefore the Program Renewal may cause the loss of small numbers of individuals. However, very few mountain lions, American badgers, ringtails, and western red bats would be affected, and Program Renewal activities are not expected to occur close enough to breeding dens for mountain lions, badgers, or ringtails to adversely affect reproduction by those species. Therefore, impacts from disturbance of individuals of these species would be less than significant under CEQA.

Small mammal control may reduce prey availability for mountain lions, American badgers, and ringtails in the Program Renewal Area, but such effects would be localized. Herbicides used for vegetation management may similarly deplete invertebrate prey for western red bats and ringtails in the Program Renewal Area due to reducing vegetation that these prey species rely on. Because of the low numbers of mountain lions, badgers, ringtails, and western red bats that forage in Program Renewal impact areas, and because no rodenticides (which could cause secondary poisoning of mountain lions and badgers) will be used by the Program

Renewal, small mammal control and herbicide use conducted under the Program Renewal is not expected to result in substantial changes in prey availability that would affect their regional populations.

Maintenance activities would reduce vegetative cover for the mountain lion, American badger, ringtail, and western red bat along streams in the Program Renewal Area. Table 3.4-5 provides estimates of temporary and permanent impacts of Program Renewal activities within habitats throughout the Program Renewal Area that potentially support these species. However, because the mountain lion, American badger, ringtail, and western red bat make only very limited use of these habitats in the Program Renewal Area, only a fraction of Program Renewal impacts estimated in Table 3.4-5 would affect these species. The introduction of nonnative vegetation would also degrade suitable habitat. In addition, as discussed under Impact BIO-1V above, maintenance activities would remove a large number of trees throughout the Program Renewal Area, which would remove suitable roost locations for the western red bat. However, these activities would have no impact on high-quality habitat for the mountain lion, American badger, ringtail, and western red bat, as they are expected to make only very limited use of habitats in the Program Renewal Area due to their rarity in the county. Further, the habitats in the Program Renewal Area that would be used by these species are widely available regionally, and the loss or modification of suitable habitats within maintenance activity work areas would not affect regional populations. Due to these combined factors, Program Renewal impacts on habitat for these species would be less than significant under CEQA. Impacts resulting in the loss of an active roost of western red bats would also be considered less than significant because this species roosts widely and only in small numbers in the Program Renewal Area, and because individuals roost solitarily so that no large roosts would be affected.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

No BMPs are proposed specifically to reduce impacts on individual mountain lions, American badgers, ringtails, or western red bats as a result of the Program Renewal. However, Valley Water will implement the following BMPs to minimize impacts on suitable habitat for these species in the Program Renewal Area:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including riparian habitats) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread of Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of the mountain lion, American badger, and western red bat in the Program Renewal Area, as these species are not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). The mountain lion and American badger may be covered under the VHP in the future, and one or more of these species may be formally covered by the VHP once the amendment is approved. At that time, Valley Water would comply with any VHP conditions specific to these species. The ringtail and western red bat are not expected to be covered under the VHP in the future.

For VHP-covered activities, compliance with habitat plan conditions will reduce impacts on the mountain lion, American badger, ringtail, and western red bat and their habitats (e.g., by minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on habitats for these species:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on fully protected species, including the ringtail.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species, including the mountain lion, American badger, ringtail, and western red bat, in Santa Clara County.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

VHP-covered Program Renewal activities may result in the disturbance of small numbers of foraging mountain lions; no impacts to denning or breeding mountain lions would occur. There is also a low potential for maintenance activities to result in the disturbance of an active den of ringtails or American badgers. In addition, the removal of trees could disturb a small number of nonbreeding western red bats. Because extremely low numbers of mountain lions, American badgers, ringtails, and western red bats would be affected relative to their regional populations, these impacts would be less than significant under CEQA, and no mitigation measures are necessary.

VHP-covered Program Renewal activities would have no impact on high-quality habitat for the mountain lion, American badger, ringtail, or western red bat, as these species make only very limited use of habitats in the Program Renewal Area due to their rarity in the county and because most Program Renewal activities are focused in developed areas where these species occur infrequently. Further, the habitats in the Program Renewal Area that would be used by these species are widely available regionally, and the loss or modification of suitable habitats within maintenance activity work areas would not affect regional habitat availability or populations. Due to these combined factors, Program Renewal impacts on habitat for these species would be less than significant under CEQA. Impacts resulting in the loss of an active roost of western red bats would also be considered less than significant because this species roosts widely and only in small numbers in the Program Renewal Area, and individuals roost solitarily so that no large roosts would be affected. No mitigation measures are necessary. The implementation of Program Renewal BMPs to minimize impacts on habitats for the mountain lion, American badger, ringtail, and western red bat would reduce impacts on habitats for these species.

VHP-covered Program Renewal activities would pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. The Program Renewal's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit mountain lions, American badgers, ringtails, and western red bats, as suitable habitat is present in existing Habitat Agency reserves. As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly "covered species" under the VHP. This conclusion is supported for mountain lions, American badgers, ringtails, and western red bats based on the presence of suitable habitats for these species in Habitat Agency reserves. Thus, the payment of VHP fees for VHP-covered Program Renewal activities will reduce impacts on the mountain lion, American badger, and western red bat. Further, if the mountain lion and American badger are added to the VHP as covered species, the VHP's conservation Program Renewal would include measures specifically intended to benefit these species.

Activities Not Covered Under the VHP

No Program Renewal impacts within tidal portions of the Program Renewal Area will result in adverse effects on the mountain lion, American badger, ringtail, or western red bat, as these species do not occur within tidal habitats.

Other non-VHP-covered Program Renewal activities could result in adverse effects on small numbers of individual mountain lions, American badgers, ringtails, and/or western red bats, as well as suitable habitat for these species. Non-VHP-covered Program Renewal activities may result in the disturbance of small numbers of foraging mountain lions; no impacts to denning or breeding mountain lions would occur. There is also a low potential for maintenance activities to result in the disturbance of an active den of ringtails or American badgers. In addition, the removal of trees could disturb a small number of nonbreeding western red bats. Because very few mountain lions, American badgers, ringtails, and western red bats would be affected relative to their regional populations, and because most Program Renewal activities are focused in developed areas where these species occur infrequently,

these impacts would be less than significant under CEQA, and no mitigation measures are necessary.

Non-VHP-covered Program Renewal activities would have no impact on high-quality habitat for the mountain lion, American badger, ringtail, or western red bat, as these species are expected to make only very limited use of habitats in the Program Renewal Area due to their rarity in the county. Further, the habitats in the Program Renewal Area that would be used by these species are widely available regionally, and the loss or modification of suitable habitats within maintenance activity work areas would not affect regional habitat availability or populations. Due to these combined factors, Program Renewal impacts on habitat for these species would be less than significant under CEQA. Impacts resulting in the loss of an active roost of western red bats would also be considered less than significant because this species roosts widely and only in small numbers in the Program Renewal Area, and individuals roost solitarily so that no large roosts would be affected. The implementation of Program Renewal BMPs to minimize impacts on habitats for the mountain lion, American badger, ringtail, and western red bat would reduce impacts on habitats for these species. Mo mitigation measures are necessary; however, mitigation provided under Mitigation Measure BIO-12 would also benefit the ringtail and/or western red bat if the mitigation occurs in areas where these species are present.

SUMMARY AND CONCLUSION

Maintenance activities could affect the mountain lion, American badger, ringtail, western red bat, and their habitat within portions of the Program Renewal Area where these species occur. Due to the limited number of individual mountain lions, American badgers, ringtail, or western red bats that would be affected by the Program Renewal, as well as the limited extent of Program Renewal-related habitat impacts that would occur relative to available habitats for these species in the region, Program Renewal activities would not result in any substantial (i.e., population-level) impacts on these species or their habitats. Therefore, VHP-covered and non-VHP-covered Program Renewal impacts on these species and their habitats would be less than significant under CEQA. The implementation of Program Renewal BMPs to minimize impacts on habitats for the mountain lion, American badger, ringtail, and western red bat would reduce impacts on habitats for these species. Mo mitigation measures are necessary; however, mitigation provided under Mitigation Measure BIO-12 would also benefit the ringtail and/or western red bat if the mitigation occurs in areas where these species are present.

Impact BIO-1Y: Impacts on the Pacific Harbor Seal (Less than Significant)

The Pacific harbor seal is protected by the Marine Mammal Protection Act. Therefore, the potential effects of the Program Renewal on this species are evaluated.

IMPACT ASSESSMENT

Harbor seals occur in the Program Renewal Area in open waters of the San Francisco Bay, and individuals occasionally wander up tidal sloughs where maintenance activities are projected to occur. Groups of harbor seals haul out at sites that typically consist of mudflats located far from areas used regularly by humans, and near deeper water where seals forage. Haul-out sites are used by seals for resting and pupping (giving birth). A known, primary haul-out site for harbor seals in the South Bay is present north of the Program Renewal Area at Mowry Slough in Fremont.

Projected sediment removal, instream vegetation management, and aquatic herbicide application activities, as well as unprojected activities along lower portions of creeks in the Program Renewal Area that harbor seals could access (e.g., Stevens Creek, the Guadalupe River, and Coyote Creek) may disturb occasional basking or foraging harbor seals. However, no Program Renewal activities are expected to occur near known pupping or major haul-out sites. Thus, impacts to individuals are expected to be limited and temporary, and maintenance activity-related disturbances would not lead to the separation of pups from nursing mothers or the abandonment of traditional haul-out sites. Thus, this impact would be considered less than significant.

Sedimentation, contaminated runoff, or hazardous material spills from maintenance activities may result in the temporary degradation of aquatic habitat for harbor seals, although such effects likely would be negligible in the context of all the anthropogenic factors adversely affecting this species and its habitats. Mercury mobilization and bioconcentration in fish on which harbor seals prey potentially could have a greater risk of impacting the health of harbor seals, although Program Renewal activities would increase mercury levels only incrementally in the prey that already were consumed by these seals. Due to the limited nature of these impacts, they are considered less than significant under CEQA.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

No BMPs are specifically proposed to reduce impacts on individual harbor seals as a result of the Program Renewal. However, Valley Water will implement the following BMPs to minimize impacts on suitable habitat for harbor seals in the Program Renewal Area:

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** will minimize the exposure of soils containing mercury in portions of the Guadalupe River watershed affected by historic mercury mining.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas and excluding fish from work areas in tidal locations to avoid and minimize impacts to water quality and special-status fish.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within nontidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of harbor seals within the Program Renewal Area, as this species is not covered under the VHP and the VHP permit area does not (and will not in the future) extend into tidal areas where this species occurs. Because the VHP permit area does not extend into this species' habitats, compliance with habitat plan conditions and the payment of VHP land cover fees and specialty fees are not expected to reduce impacts of the Program Renewal on this species and its habitats.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

No VHP-covered activities will affect the harbor seal, as the VHP permit area does not (and will not in the future) extend into tidal habitats.

Activities Not Covered under the VHP

Non-VHP-covered Program Renewal activities occurring in tidal habitats may disturb occasional basking or foraging harbor seals. However, impacts to individuals are expected to be limited and temporary, and would be considered less than significant under CEQA. Sedimentation, contaminated runoff, or hazardous material spills from maintenance activities may result in the temporary degradation of aquatic habitat for harbor seals, and mercury mobilization and bioconcentration in fish on which harbor seals prey potentially could impact the health. However, these impacts would be extremely limited, and less than significant under CEQA. The implementation of Program Renewal BMPs to minimize impacts on habitats, including avoiding exposing soils with high levels of mercury, would reduce these impacts. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

Program Renewal impacts to individual harbor seals are expected to be limited and temporary, and maintenance activity-related disturbances would not lead to the separation of pups from nursing mothers or the abandonment of traditional haul-out sites. Thus, this impact would be considered less than significant. Indirect impacts to water quality would also have a limited nature and would be considered less than significant under CEQA. No mitigation measures are necessary.

No VHP-covered activities will affect the harbor seal, as the VHP permit area does not (and will not in the future) extend into tidal habitats. The implementation of Program Renewal BMPs to minimize impacts on habitats, including avoiding exposing soils with high levels of mercury, would reduce impacts of non-VHP-covered activities on the harbor seal and its habitats. No mitigation measures are necessary.

Impact BIO-1Z: Impacts on Non-Special-Status Animal Species (Less than Significant with Mitigation)

Non-special-status fish, amphibian, reptile, mammal, and bird species are discussed together because they occur throughout the Program Renewal Areas, and mitigation measures to reduce impacts of the Program Renewal to less-than-significant levels under CEQA are similar. Although these species are not "special-status", they are discussed here because the large scope of the Program Renewal will affect entire communities of wetland and riparian-associated animals. Rather than discuss impacts on these communities under Impacts BIO-2 and BIO-3, we discuss them here to simplify those sections.

IMPACT ASSESSMENT

As discussed in Section 3.4.3, "Environmental Setting," the rivers and creeks of Santa Clara County are home to over 20 native species of fish (Valley Water 1995, Leidy 2007, Valley Water 2008, 2008b, Smith 2019, Valley Water 2019, 2020, 2021, Valley Water unpublished data), including the special-status species discussed under Impacts BIO-1D to BIO-1I above

as well as many non-special-status species such as the prickly sculpin, Sacramento sucker, and threespine stickleback. Likewise, several species of non-special-status amphibians, such as the western toad, California newt, and Pacific chorus frog, use creeks throughout the Program Renewal Area as breeding, foraging, and dispersal habitat. The Program Renewal would impact approximately 114 acres of aquatic habitats and 444 acres of vegetated wetlands that support these species; as well as 91 acres of woody riparian habitat that provide shade, contribute to in-stream habitat complexity, and provide foraging habitats and refugia for amphibians; and 4,888 acres of herbaceous streambank habitat that provides foraging opportunities and refugia for amphibians (Table 3.4-5). Several species of non-special-status reptiles, such as the gopher snake and western fence lizard, also use habitats along creeks throughout the Program Renewal Area as breeding, foraging, and dispersal habitat, although the majority of these species (with the exception of garter snakes, which forage in aquatic habitats) occur outside of aquatic habitats. The Program Renewal would impact approximately 4,888 acres of herbaceous streambank habitats, 91 acres of woody riparian habitats, and 5,318 acres of other non-developed uplands that provides habitat for these species (Table 3.4-5).

Species of non-special-status mammals such as rodents, rabbits, raccoons, skunks, and bobcats (non-special-status bats are discussed separately under Impact BIO-1V above) also breed, forage, and disperse in upland habitats along Program Renewal Area channels. The Program Renewal would impact approximately 4,888 acres of herbaceous streambank vegetation, 91 acres of woody riparian vegetation, and 5,318 acres of non-developed uplands that would provide suitable habitat for these species (Table 3.4-5).

Finally, numerous species of birds, especially riparian and wetland-associated birds, nest, forage, and disperse in riparian, wetland, and upland vegetation along these channels. The Program Renewal would impact approximately 144 acres of aquatic habitat for waterbirds such as ducks; 444 acres of vegetated wetlands that provide habitat for wetland-associated birds such as marsh wrens and American coots; 4,888 acres of herbaceous streambank vegetation that provide habitat for species such as red-winged blackbirds; 91 acres of woody riparian vegetation that provide habitat for species such as the western flycatcher; and 5,318 acres of non-developed upland habitats that provide habitat for a variety of species, depending on the vegetation community present.

As described under “Impacts on Common and Special-Status Fish and Wildlife” above, maintenance activities may result in direct and indirect effects on non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area, as well as breeding, foraging, and dispersal habitat for these species. Program Renewal activities could affect the survival, reproduction, and/or growth of these species where they breed in the Program Renewal Area. In addition, the physical presence of people and equipment during maintenance activities can result in adverse effects on individuals due to direct and indirect disturbance, including the loss of individuals. Maintenance activities would also reduce vegetative cover for these species along streams in the Program Renewal Area. In addition, vegetation management activities would include the application of herbicides, as discussed under “Impacts on Common and Special-Status Fish and Wildlife” above. Herbicides could result in adverse effects on non-special status fish and amphibians, as discussed for special-status species under Impacts BIO-1D–1J above, including direct effects on the survival, reproduction, and growth of individuals, as well as indirect effects including reductions in available prey and habitat modification.

Valley Water studies have found that wetland vegetation often quickly re-establishes following sediment removal activities; therefore, any impacts on such habitats would be of short duration (i.e., 2–3 years). In addition, while frequent, repetitive sediment removal or vegetation management in freshwater areas would result in a long-term reduction of this habitat; less frequent, though periodic, sediment removal and herbicide application prevent succession that would ultimately convert emergent vegetation to tall woody riparian habitat. Therefore, many Program Renewal activities are expected help to maintain emergent vegetation in the Program Renewal Area over the long term, at the expense of 2–3 years of habitat loss immediately following sediment removal or vegetation management. Due to these combined factors, impacts of maintenance activities on suitable habitat for non-special-status species that utilize emergent vegetation, such as Pacific tree frogs, song sparrows, and marsh wrens, are less than significant under CEQA.

Other non-special-status fish and amphibians that would be impacted by the Program Renewal are relatively abundant and widespread in the region. As a result, any one maintenance activity would not result in a substantial effect on regional populations of these species or their habitats. However, maintenance activities could impact relatively large numbers of these species over the entire geographic and temporal scope of the 10-year Program Renewal, which would ultimately result in modifications to extensive areas of suitable habitat, and potentially the loss and disturbance of large numbers of individuals. Due to the geographic and temporal extent of Program Renewal impacts on individuals, they would be considered significant under CEQA. In addition, the loss of woody riparian and wetland habitats that support non-special-status fish and wildlife species would be significant under CEQA due to the high value these habitats provide to fish and wildlife communities. However, herbaceous streambank and upland vegetation, including communities dominated by natives and nonnatives, regenerates quickly and, compared to woody riparian vegetation dominated by trees and shrubs, provides relatively low habitat functions and values for wildlife. In addition, these habitats are extensively available in the Program Renewal Area vicinity, and Program Renewal impacts are not expected to permanently remove or degrade these areas such that populations of non-special-status wildlife species cannot re-establish following the maintenance work. Therefore, Program Renewal impacts on herbaceous streambank and upland vegetation and associated non-special-status wildlife are less than significant under CEQA.

Applicable Best Management Practices and VHP Conditions

Valley Water will implement the following BMPs to avoid and minimize impacts on the non-special-status fish, amphibians, reptiles, mammals, and birds and their habitats in the Program Renewal Area:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to avoid and minimize times of year when native fish and amphibians are most likely to be present.
- **BMP GEN-2: Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when non-special-status fish and amphibians are less likely to be present and provides additional measures to ensure that effects of instream herbicide application on aquatic wildlife are minimized.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities,** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized dewatering.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.

- **BMPs GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at nontidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas in tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within nontidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low-ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.
- **BMP BANK-2: Concrete Use near Waterways** provides measures to ensure that fresh concrete is isolated until it no longer poses a threat to water quality.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions specifically focus on protection of non-special-status invertebrate, amphibian, reptile, or mammal species within the Program Renewal Area, as these species are not covered under the VHP or listed as fully protected in California (such that VHP Condition 1 would apply). These species are also not expected to be covered under the VHP in the future. Nesting birds do receive protection under the VHP via Condition 1, which prohibits impacts on nesting, protected bird species.

For VHP-covered activities, compliance with habitat plan conditions will reduce impacts on non-special-status species and their habitats (e.g., by protecting water quality, preventing erosion, and minimizing habitat impacts). Specifically, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on habitats:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on legally protected species.
- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.
- **Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

Further, Valley Water would pay VHP impact fees that would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management of habitats used by a wide variety of native non-special-status fish, amphibian, reptile, mammal, and bird species.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

VHP-covered activities could result in the injury or mortality of non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area. As discussed above, impacts to species that utilize emergent wetland, herbaceous streambank, and herbaceous upland habitats would be less than significant under CEQA. However, Program Renewal impacts on non-special-status species in other habitats would be significant under CEQA, especially within wetland and riparian habitats, as these areas support high biodiversity. Valley Water will implement BMPs to avoid and minimize the loss of individual non-special-status aquatic vertebrates (including native fish and amphibians that are present when dewatering occurs) by relocating them during dewatering. Valley Water will also implement BMPs to avoid and minimize impacts on active nests of native birds in the Program Renewal Area. With the implementation of these BMPs, impacts due to the loss of individual native fish and birds would be less than significant under CEQA. However, the injury or mortality of relatively large numbers of non-special-status amphibians (outside of dewatering areas), reptiles, and mammals would still potentially occur as a result of maintenance activities. Due to the potential impacts to large numbers of non-special-status fish and wildlife species over the entire geographic and temporal scope of the 10-year Program Renewal, these impacts would be significant under CEQA. No mitigation measures are necessary.

VHP-covered activities would also result in the loss of habitats for non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area. As discussed above, impacts to emergent wetland and herbaceous upland habitats that are maintained in their existing conditions by maintenance activities would be less than significant under CEQA. However, Program Renewal impacts to other habitats, especially wetland and riparian habitats, would be significant under CEQA. Valley Water will implement BMPs to avoid and minimize the loss of these habitats in the Program Renewal Area. Nevertheless, maintenance activities could result in impacts to extensive areas of suitable habitat over the 10-year Program Renewal. As discussed above, due to the geographic and temporal extent of these impacts, such impacts would be considered significant under CEQA, and no mitigation measures are necessary.

Valley Water would pay VHP fees for VHP-covered impacts on natural land cover types that provide habitat for non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats. The Program Renewal's contribution to the Habitat Agency's reserve system would benefit these species, which are widespread in the Program Renewal Area and occur in existing Habitat Agency reserves. As discussed in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County in addition to the species that are explicitly "covered species" under the VHP. This conclusion is supported for the non-special-status fish, amphibians, reptiles, mammals, and birds that would be impacted by the Program Renewal based on the relatively wide distribution of these species in Santa Clara County as well as the presence of populations of these species within the reserve system. Therefore, with the payment of VHP fees and compliance with the VHP's conditions, the VHP is expected to have a net benefit on the conservation of these species, and Program Renewal impacts on non-special-status fish, amphibians, reptiles, mammals, and birds as well as woody riparian and wetland habitats would be reduced to less than significant levels under CEQA. The implementation of Mitigation Measures BIO-1, BIO-3, BIO-6, BIO-7, BIO-8, BIO-9, BIO-11, and BIO-12 would reduce VHP-covered Program Renewal impacts on these species by providing compensatory mitigation for various special-status species and sensitive habitats that would benefit non-special-status species that occur in similar habitats.

Activities Not Covered under the VHP

Non-VHP-covered activities could result in the injury or mortality of non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area. As discussed above, impacts to species that utilize emergent wetland, herbaceous streambank, and herbaceous upland habitats would be less than significant under CEQA. However, Program Renewal impacts on non-special-status species in other habitats would be significant under CEQA, especially within wetland and riparian habitats, as these areas support high biodiversity. Valley Water will implement BMPs to avoid and minimize the loss of individual non-special-status aquatic vertebrates (including native fish and amphibians that are present when dewatering occurs) by relocating them during dewatering. Valley Water will also implement BMPs to avoid impacts on active nests of native birds in the Program Renewal Area. With the implementation of these BMPs, impacts due to the loss of individual native fish and birds would be less than significant under CEQA, and no mitigation measures are necessary. However, the injury or mortality of relatively large numbers of non-special-status amphibians (outside of dewatering areas), reptiles, and mammals would still potentially occur as a result of maintenance activities. Due to the potential impacts to large numbers of non-special-status fish and wildlife species over the entire geographic and temporal scope of the 10-year Program Renewal, these impacts would be significant under CEQA.

Non-VHP-covered activities would also result in the loss of habitats for non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area. As discussed above, impacts to emergent wetland and herbaceous upland habitats that are maintained in their existing conditions by maintenance activities would be less than significant under CEQA, and no mitigation measures are necessary. However, Program Renewal impacts to other habitats, especially wetland and riparian habitats, would be significant under CEQA. Valley Water will implement BMPs to avoid and minimize the loss of these habitats in the Program Renewal Area. Nevertheless, maintenance activities could result in impacts to extensive areas

of suitable habitat over the 10-year Program Renewal. As discussed above, due to the geographic and temporal extent of these impacts, such impacts would be considered significant under CEQA.

Mitigation measures implemented for impacts to special-status species and their habitats will reduce Program Renewal impacts on non-special-status species to less than significant levels under CEQA. Mitigation Measures BIO-12 and BIO-13, provided under Impacts BIO-2A and BIO-3 below (respectively), would require Valley Water to provide compensatory mitigation for impacts to sensitive wetland, aquatic, and riparian habitats. This mitigation may take a variety of forms, but all mitigation for impacts to those habitats would benefit non-special-status animals, either directly or indirectly through wetland, aquatic, and riparian habitat restoration, enhancement, and protection, which would help to maintain water quality, cover, and instream habitat complexity. Compensatory mitigation would also be provided under Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-7, BIO-8, BIO-9, BIO-10, and BIO-11 for impacts on special-status species and their habitats, and this mitigation (as implemented for special-status species in areas where those species occur) would benefit non-special-status species that occur in similar habitats. Thus, with the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-7, BIO-8, BIO-9, BIO-10, and BIO-11, impacts on non-special-status animals and their habitats are reduced to less-than-significant levels under CEQA.

Herbicide application is not covered under the VHP. BMP GEN-2 provides a list of restrictions on herbicide use within streams in the Program Renewal Area. Herbicide use would also be subject to Program Renewal requirements, including application only during appropriate wind conditions to minimize the spread of these chemicals to untargeted areas. With the implementation of BMPs, impacts of herbicide application on non-special-status fish and amphibians would be less than significant under CEQA. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

For all Program Renewal activities (regardless of VHP coverage), maintenance activities could result in the injury or mortality of non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area. As discussed above, impacts to species that utilize emergent wetland, herbaceous streambank, and herbaceous upland habitats would be less than significant under CEQA, and no mitigation measures are necessary. However, Program Renewal impacts on non-special-status species in other habitats would be significant under CEQA, especially within wetland and riparian habitats, as these areas support high biodiversity. Valley Water will implement BMPs to reduce the loss of individual native fish and birds to less than significant levels under CEQA. However, the injury or mortality of relatively large numbers of non-special-status amphibians (outside of dewatering areas), reptiles, and mammals would be significant under CEQA.

Regardless of VHP-coverage, Program Renewal activities to emergent wetland and herbaceous upland habitats that are maintained in their existing conditions by maintenance activities would be less than significant under CEQA, and no mitigation measures are necessary. However, Program Renewal impacts to other habitats, especially wetland and riparian habitats, would be significant under CEQA. Valley Water will implement BMPs to avoid and minimize the loss of these habitats in the Program Renewal Area. Nevertheless, Program Renewal impacts would be considered significant under CEQA.

VHP-covered activities would pay VHP fees for VHP-covered impacts on natural land cover types that provide habitat for non-special-status fish, amphibians, reptiles, mammals, and birds in the Program Renewal Area; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats. With the payment of VHP fees and compliance with the VHP's conditions, Program Renewal impacts on non-special-status fish, amphibians, reptiles, mammals, and birds as well as woody riparian and wetland habitats would be reduced to less than significant levels under CEQA. No mitigation measures are necessary.

Non-VHP-covered Program Renewal activities will implement Mitigation Measures BIO-12 and BIO-13, provided under Impacts BIO-2A and BIO-3 below (respectively), which require Valley Water to provide compensatory mitigation for impacts to sensitive wetland, aquatic, and riparian habitats. Compensatory mitigation would also be provided under Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-7, BIO-8, BIO-9, BIO-10, and BIO-11 for impacts on special-status species and their habitats, and this mitigation (as implemented for special-status species in areas where those species occur) would benefit non-special-status species that occur in similar habitats. Thus, with the implementation of Mitigation Measures BIO-1, BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, and BIO-13, impacts of non-VHP-covered Program Renewal activities on non-special-status animals and their habitats are reduced to less-than-significant levels under CEQA.

Impact BIO-1AA: Impacts on the Bay Checkerspot Butterfly (Less than Significant with Mitigation)

IMPACT ASSESSMENT

The Bay checkerspot butterfly may also be affected by maintenance activities that occur adjacent to serpentine habitats in the Program Renewal Area. Suitable habitat for the Bay checkerspot butterfly's host plants (i.e., dwarf plantain [*Plantago erecta*] and purple owl's clover [*Castilleja exserta*]) is present in upland habitats in the Program Renewal Area where serpentine influence is present. In particular, dwarf plantain can be locally abundant in disturbed areas such as levees, and serpentine communities likely occur near certain work sites, such as along Upper Silver Creek. However, no serpentine communities have been identified within maintenance activity areas during Valley Water's surveys in 2004 and 2008, or during the course of surveys performed in support of SMP-2. As a result, the Bay checkerspot butterfly would not occur within Program Renewal work areas and would be unlikely to occur adjacent to these areas. Nevertheless, Bay checkerspot butterflies may be present in serpentine communities adjacent to maintenance activity locations, and projected activities along Upper Silver Creek, Coyote Creek, Calero Creek, and West Little Llagas Creek would occur within or adjacent to designated critical habitat for this species (Figure 3.4-2). Thus, there is some possibility that maintenance activities may impact individual Bay checkerspot butterflies or their habitat.

Because the Bay checkerspot butterfly typically occurs high on hillsides in the Program Renewal Area rather than in the lower-elevation locations where the majority of maintenance activities will occur, impacts to occupied Bay checkerspot butterfly habitat (and individuals) at work locations will be very limited, if in fact such impacts occur at all. Nevertheless, as described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities could result in a variety of impacts on invertebrates such as the Bay checkerspot butterfly, including indirect impacts on individuals and temporary and

permanent impacts on suitable habitat. The Bay checkerspot butterfly and its host plants may be impacted by indirect effects of people or equipment, as well as by herbicide application. Because the Bay checkerspot butterfly (a federally threatened species) is so rare that any occurrence of this species would be significant to the population, take of individuals such that a substantial (i.e., population-level) effect occurs would be considered significant under CEQA. In addition, indirect impacts on serpentine habitat that result in the removal of Bay checkerspot butterfly larval host plants would be considered significant under CEQA due to the restricted habitat range remaining to this species in the Program Renewal Area.

Additional indirect effects of Program Renewal activities on Bay checkerspot butterflies can occur due to nitrogen emitted by maintenance vehicles and equipment. Such nitrogen can fertilize serpentine soils and allow nonnative grasses and forbs that would not typically be able to colonize (at least robustly) serpentine habitats to become established and outcompete Bay checkerspot butterfly host plants. There is some potential for nitrogen emitted by maintenance vehicles and equipment to contribute to significant cumulative nitrogen deposition impacts on Bay checkerspot butterfly host plants growing within or downwind of areas where the nitrogen is emitted. Due to the sensitivity of these species, the cumulative impacts of nitrogen deposition, to which this Program Renewal would contribute, would be significant under CEQA.

Applicable BMPs and VHP Conditions

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on the Bay checkerspot butterfly:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** requires a qualified botanist to identify habitat for special-status plants, including serpentine habitats. Appropriate methods will be used to ensure that maintenance activities avoid all activities within serpentine habitats. In addition, any adjacent serpentine communities would be mapped and delineated in the field, and an appropriate buffer applied to minimize indirect impacts.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants. For activities adjacent to serpentine communities, equipment and tools will be cleaned and sanitized prior to arrival on the site, footwear will be cleaned and disinfected, work will be scheduled to avoid rainy periods as feasible, and erosion control and revegetation materials will be clean with a low risk of *Phytophthora* contamination.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of special-status plants and Bay checkerspot butterflies.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of

materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-36: Dust Management** requires implementation of measures to reduce dust within and adjacent to work areas, including watering exposed surfaces, covering haul trucks, sweeping streets, and limiting vehicle speeds.
- **BMP REVEG-1: Seeding** would ensure that exposed soils will be stabilized with native seed to prevent erosion.

Most importantly, Valley Water commits to implementing BMP GEN-8 and avoiding all direct and the majority of indirect (with the exception of nitrogen deposition, discussed below) impacts on serpentine communities and species.

VHP-covered Program Renewal activities would be required to comply with the following condition to avoid and minimize impacts on the VHP-covered Bay checkerspot butterfly and serpentine habitat in the Program Renewal Area:

- **Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization** will help to avoid and minimize Program Renewal impacts on serpentine habitats and the Bay checkerspot butterfly.

However, with the implementation of BMP GEN-8, which specifies avoidance of direct impacts on serpentine habitats (which do not geographically overlap maintenance activity areas), compliance with this condition is not anticipated to be needed.

The VHP mitigates nitrogen deposition impacts via the payment of nitrogen deposition fees for new vehicle trips. Maintenance activities, such as those under the Program Renewal, are not subject to the payment of these fees; however, these fees are intended to fund all necessary nitrogen-related mitigation for impacts of all VHP-covered activities, including activities that are and are not subject to the payment of nitrogen deposition fees.

VHP land cover fees and specialty fees for VHP-covered impacts on serpentine habitats in the Program Renewal Area are not anticipated, as no impacts within these areas would occur.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With the implementation of Program Renewal BMPs, the majority impacts of VHP-covered Program Renewal activities on the Bay checkerspot butterfly and its habitat are less than significant under CEQA. Compliance with serpentine-related VHP conditions and payment of VHP impact fees for serpentine land cover types are not anticipated to be needed, as no direct impacts within serpentine habitats would occur. However, due to the sensitivity of serpentine habitats and the rarity of the Bay checkerspot butterfly in the region, to ensure that any residual impacts of Program Renewal activities on this species are reduced to less-than-significant levels, Valley Water will implement Mitigation Measure BIO-1, which specifies the payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for VHP-covered and non-VHP-covered activities to reduce effects of nitrogen deposition.

Activities Not Covered under the VHP

Herbicide application, which is not covered under the VHP, would be avoided directly in serpentine areas per BMP GEN-8, and indirect impacts would be minimized by observing an appropriate non-disturbance buffer around serpentine areas if recommended by a qualified biologist. Thus, with the implementation of BMPs and compliance with applicable regulations, herbicides would not be applied in locations where Bay checkerspot butterflies are present, or in nearby areas using methods that could result in indirect impacts on this species, and impacts of herbicide application on Bay checkerspot butterflies would be less than significant under CEQA. No mitigation measures are necessary.

No maintenance activities within tidal portions of the Program Renewal Area will result in direct adverse effects on Bay checkerspot butterflies, as serpentine habitats do not occur within or near tidal reaches of the Program Renewal Area. For other non-VHP-covered maintenance activities, Valley Water avoids conducting maintenance activities in serpentine areas, and indirect effects on these areas are effectively minimized through BMPs. Thus, with the implementation of BMPs, the majority of impacts of non-VHP-covered Program Renewal activities on the Bay checkerspot butterfly would be less than significant under CEQA. However, due to the sensitivity of serpentine habitats and the rarity of the Bay checkerspot butterfly in the region, to ensure that any residual impacts of nitrogen deposition from Program Renewal activities are reduced to less-than-significant levels, Valley Water will implement Mitigation Measure BIO-1, which specifies the payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for non-VHP-covered (and VHP-covered) activities to reduce effects of nitrogen deposition.

SUMMARY AND CONCLUSION

Program Renewal activities could result in significant indirect impacts on Bay checkerspot butterflies due to the loss of individuals and/or habitat. However, for all Program Renewal activities (regardless of VHP coverage), BMPs will ensure that indirect impacts are effectively minimized. In addition, Valley Water will implement Mitigation Measure BIO-1, which specifies payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for all Program Renewal activities (regardless of VHP coverage) to reduce effects of nitrogen deposition.

For both VHP-covered and non-VHP-covered activities, with the implementation of Program Renewal BMPs and Mitigation Measure BIO-1, impacts on the Bay checkerspot butterfly are less than significant under CEQA.

Impact BIO-2: A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS (Less than Significant with Mitigation)

The CDFW defines sensitive natural communities and vegetation alliances using NatureServe's standard heritage Program Renewal methodology (CDFW 2024a), as described above under *Sensitive Natural Communities, Vegetation Alliances, and Habitats*. Aquatic, wetland, and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the

USACE, RWQCB, CDFW, and/or the USFWS. Program Renewal impacts on sensitive riparian habitats are considered and evaluated under Impact BIO-2A, and impacts on other sensitive natural communities, vegetation alliances/associations, or other such communities identified in local or regional plans, policies, and regulations are evaluated under Impact BIO-2B. Sensitive wetland and aquatic habitats are addressed separately under Impact BIO-3 below. Non-special status species associated with wetlands and riparian habitats are discussed separately under Impact BIO-1Z.

Impact BIO-2A: Loss or Disturbance of Riparian Habitat, Including Sycamore Alluvial Woodland (Less than Significant with Mitigation)

IMPACT ASSESSMENT

Sensitive riparian habitats are located along streams throughout the Program Renewal Area. Because maintenance activities are focused along channels, such activities would result in the loss, modification, and/or disturbance of extensive areas of riparian vegetation in the Program Renewal Area, estimated at 4,888 acres of herbaceous streambank habitat (which is typically California annual grassland or ruderal habitat along streambanks) and 91 acres of woody riparian habitat (including willow riparian forest and scrub, central California sycamore alluvial woodland, and mixed riparian woodland and forest VHP land cover types) over the course of the Program Renewal (Table 3.4-5).

Riparian habitats in the Program Renewal Area include the CDFW-designated sensitive sycamore alluvial woodland plant community. No activities are projected within the highest-quality occurrences of sycamore alluvial woodland, such as those along Coyote Creek from U.S. Highway 101 downstream to the Ogier Ponds, or along Pacheco Creek. However, maintenance activities could result in temporary or permanent impacts on 3 acres of sycamore alluvial woodland habitat (Table 3.4-6).

As described above under "Impacts on Non-Instream Sensitive Plant Communities" above, maintenance activities could result in the loss of riparian vegetation through direct removal, herbicide use, trampling, and other impacts. During any bank stabilization, sediment removal, vegetation management, and animal conflict management activity that would occur in or adjacent to riparian habitat, equipment use, vehicle traffic, and worker foot traffic may result in the injury or mortality of individual plants. These activities could result in death, altered growth, or reduced seed set through physically breaking, crushing, wilting, or uprooting plants, and the compaction of soil by heavy equipment could damage plant roots. In addition, vegetation management activities and the creation of access routes and staging areas may result in the mechanical or physical removal of vegetation as a result of off-target herbicide contact via drift.

The majority of Program Renewal impacts within riparian habitats (4,887 acres, or 99 percent of the Program Renewal's impacts within herbaceous streambank vegetation; and 86 acres, or 95 percent of the Program Renewal's impacts within woody riparian vegetation) would be temporary in that they would not preclude the regeneration of the existing vegetation. However, the repetitive nature of impacts in at least some areas would result in longer-term effects over the 10-year duration of the Program Renewal. In addition, permanent impacts would occur in areas where activities such as bank stabilization would result in the permanent loss of natural areas, or where other maintenance activities would require the permanent removal of vegetation. The Program Renewal would also contribute

to the long-term modification of riparian plant communities if certain plant species are targeted by maintenance activities. For example, young cottonwoods are often removed during vegetation management, which prevents these trees from maturing into the large trees that provide habitat for a number of wildlife species. Cottonwoods already suffer the effects of anthropogenic stream modification, including restrictions on the ability of streams in urban areas to meander, and thus regeneration of cottonwood-dominated forests in urban Santa Clara County is poor under existing conditions. Maintenance activities that would further prevent the maturation of cottonwoods in the Program Renewal Area could contribute to the long-term decline in multi-aged cottonwood-dominated riparian forests in the region.

As discussed under "Environmental Setting" above, woody riparian habitats in the Program Renewal Area provide a wide range of biological functions for wildlife, including aquatic habitat for fish and other aquatic species, foraging and nesting habitat for birds, and movement corridors for numerous terrestrial species. As a result, impacts to riparian habitats would affect a variety of fish and wildlife species in addition to the plant community that occurs there. Impacts on common and special-status plant and wildlife species resulting from disturbance or loss of riparian habitat are addressed under Impact BIO-1 above. Due to the sensitivity of woody riparian habitats (including willow riparian forest and scrub, central California sycamore alluvial woodland, and mixed riparian woodland and forest), their value to wildlife communities, and the potential for extensive effects of the Program Renewal on these habitats over time, temporary and permanent impacts on woody riparian habitats would be considered significant under CEQA.

Herbaceous streambank vegetation often includes nonnative species such as black mustard (*Brassica nigra*), poison hemlock, perennial ryegrass (*Lolium perenne*), Italian thistle, bristly ox-tongue, sweet fennel (*Foeniculum vulgare*), and smilograss (*Stipa miliacea*). Such vegetation typically dominates the banks of reaches that would be frequently disturbed by maintenance activities. Herbaceous vegetation, including communities dominated by natives and nonnatives, regenerates quickly and, compared to woody riparian vegetation dominated by trees and shrubs, provides relatively low habitat functions and values for wildlife. As a result, temporary and permanent impacts of Program Renewal activities on herbaceous streambank vegetation would not have substantial ecological effects, and these impacts are less than significant under CEQA.

The majority of impacts of herbicide application (28 of 29 acres, or 97 percent) and vegetation management (43 of 56 acres, or 77 percent) will occur within existing PMAs (Table 3.4-5). If in-perpetuity mitigation has already been provided for impacts of a particular activity along a given reach (e.g., in a PMA), Program Renewal impacts within these areas are considered less than significant, and no additional mitigation is necessary under CEQA. However, mitigation may be required for conducting a different maintenance activity along that reach. For example, if mitigation was previously provided in perpetuity only for herbicide application along a given reach, no additional mitigation for herbicide application along that reach would be necessary, but mitigation for vegetation management activities along that reach would be necessary.

Applicable Best Management Practices and VHP Conditions

Valley Water will implement the following BMPs to minimize impacts on riparian habitat in the Program Renewal Area:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-20: Hazard Tree Removal** limits surface soil disturbance, requires revegetation with appropriate native woody species, and prohibits removal of any tree known to have supported Swainson's hawk, bald eagle, or golden eagle nests within the past five years.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.

In addition to Valley Water BMPs, VHP-covered Program Renewal activities will comply with the following condition to avoid and minimize impacts on riparian habitat:

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees occurring outside of an existing PMA, as well as specialty fees for impacts to riparian habitats. The specialty fees are used by the Habitat Agency to restore, protect, and manage riparian habitats, among other habitats, in the VHP area; these fees are set so that the riparian restoration, protection, and management performed by the Habitat Agency mitigates all impacts of VHP-covered activities on riparian habitats to less than significant levels. The VHP will acquire a minimum of 250 acres of riparian forest and scrub and 40 acres of central California sycamore alluvial woodland (ICF International 2012). Restoration or creation of up to approximately 339 acres of riparian forest and scrub in the Reserve System is also anticipated (ICF International 2012). For every 1 acre of willow riparian forest and scrub and mixed riparian forest and woodland impacted by VHP-covered activities, 2 acres will be preserved and enhanced, and 1 acre will be restored, for a mitigation ratio of 3:1. For every 1 acre of central California sycamore alluvial woodland impacted by VHP-covered activities, 2 acres will be preserved and enhanced and 2 acres will be restored, for a mitigation ratio of 4:1.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. With the implementation of Program Renewal BMPs, compliance with applicable VHP conditions, and payment of VHP impact fees (including specialty fees for impacts to riparian habitat) for impacts occurring outside of existing PMAs, temporary and permanent impacts of VHP-covered Program Renewal activities on riparian habitat (including sycamore alluvial woodland) are less than significant under CEQA, and no mitigation measures are necessary.

Activities Not Covered under the VHP

No Program Renewal impacts within tidal portions of the Program Renewal Area will result in adverse effects on riparian habitat, as this habitat type does not occur within tidal habitats in the Program Renewal Area.

BMP GEN-8 states that prior to conducting herbicide use, sensitive habitats (including riparian habitats) would be identified and, if present, a qualified biologist would recommend appropriate measures (e.g., maintaining a no-disturbance buffer or adjusting the timing of activities) to avoid and minimize effects. BMP GEN-8 also specifies that a qualified biologist will determine if a given type of vegetation management is ecologically appropriate, and alternative strategies will be considered based on the biologist's recommendations. Thus, with the implementation of BMPs, impacts of herbicide application on riparian habitats would be less than significant under CEQA, and no mitigation measures are necessary.

For other non-VHP-covered maintenance activities, even with the implementation of BMPs, temporary and permanent impacts on riparian habitat would be considered significant under CEQA due to the sensitivity of woody riparian habitat, its value to wildlife communities, and the potential for extensive effects of the Program Renewal on this habitat over time.

Mitigation Measure BIO-12 below would be implemented to reduce this impact to a less than significant level.

Mitigation Measure BIO-12: Compensatory Mitigation for Impacts to Woody Riparian Vegetation

The Program Renewal's compensatory mitigation package, which is detailed in Chapter 10 of the SMP Manual, shall be implemented by Valley Water to compensate for new impacts (i.e., impacts that do not fall within an existing PMA for the activity being performed) on woody riparian vegetation from non-VHP-covered activities. No compensatory mitigation will occur for corrective pruning. Following the procedure described under "Mitigation Feasibility Assessment, Monitoring, Reporting, and Success Criteria" above and in *Appendix F*, Valley Water would refine the quantification of impacts to riparian vegetation that occur during a specific year, tallying the impact totals at the end of the year, and compensatory mitigation will be implemented the following year, in many cases. Exceptions will occur in cases in which compensatory mitigation is incorporated directly into the Program Renewal work areas; in those cases, compensatory mitigation may be implemented during the same year in which impacts occur. Details regarding performance criteria for mitigation, as well as for monitoring and reporting, are described under "Mitigation Feasibility Assessment, Monitoring, Reporting, and Success Criteria" above and in *Appendix F*.

Valley Water will mitigate for temporary and permanent impacts to riparian vegetation from non-VHP-covered activities via one or more of the following options:

- Develop new land acquisition and conservation-based projects to create new PMAs as mitigation for impacts to riparian habitats.
- Annual mitigation approaches for activities that are more infrequent, and where establishing new PMAs would not be appropriate, such as encampment cleanup and bank rehabilitation, a grant program to fund projects by local watershed groups, trash removal, revegetation, concrete removal, and post-wildfire rehabilitation.
- For impacts to nontidal wetlands and aquatic habitats, the payment of fees via the Habitat Agency's Voluntary Fee Payments Policy. This option would be subject to consistency with VHP requirements and Habitat Agency approval, and contingent on the Habitat Agency agreeing to use Valley Water's fees to provide mitigation for the resource (i.e., riparian habitat) being affected.
- Individual, stand-alone restoration projects that could provide either permanent or temporary annual mitigation, such as the following:
    - Riparian revegetation would be conducted to establish and/or enhance habitat for native wildlife species while providing shade, sources of organic matter, coarse woody debris, improved root and soil structures and other benefits. Revegetation would occur in the

same watershed as the impact and would follow the typical planting palette provided in Chapter 10 or a site-specific palette would be used. ~~Removal of trees >6" dbh that is not mitigated through the VHP will be mitigated through revegetation at a minimum 1:1 ratio.~~ Removal of non-invasive trees >6" dbh that is not mitigated through the VHP will be mitigated through revegetation at either a 2:1 or 3:1 (replacement tree to removed tree). All native trees >6" dbh that are not removed will be mitigated at a 3:1 ratio. All non-native trees >6" dbh that are not classified as invasive species will be mitigated at a 2:1 ratio. ~~For each removed non-invasive tree >6" dbh that provides unique functions and values and is otherwise healthy that is removed, Valley Water will install one native tree on a mitigation site within the same watershed.~~ The removal of >6" dbh western sycamores and native oaks must be replaced in-kind; otherwise, there is no requirement to match species when replacing trees.

- Valley Water in consultation with resource agencies may develop reach characterization sheets for areas where frequent maintenance activities occur. These sheets would describe biological resources, water quality, and ecological functions within the maintenance area, and identify ongoing and future maintenance needs, opportunities to avoid and minimize impacts to sensitive habitats as well as potential restoration opportunities. This information would be used for planning purposes to maintain a site in a state of ecological equilibrium. If vegetation management (other than the removal of trees >6" dbh, the conversion of habitat from one type to another, or activities that impact the site's function as habitat for special-status species) within a reach can be directed towards achieving that reach's target ecological function and value, then the maintenance work may be exempt from compensatory mitigation requirements.
- Valley Water will enhance ecosystem recovery following particularly large and destructive wildfires. Mitigation activities may include, but are not limited to, revegetation and hydroseeding to reduce erosion, invasive plant species control, road repair, and removing critical safety hazards (e.g., dead or dying trees) thereby promoting and supporting habitat for animal and plant species and reducing risk of additional fires that could further damage habitat.

Valley Water will mitigate impacts to sensitive riparian communities, including sycamore alluvial woodland, oak woodland, and high-quality occurrences of cottonwood-dominated forest in-kind by focusing on the enhancement, preservation, and/or restoration of that sensitive community type. "High-quality" would be determined by a qualified biologist based on criteria such as evidence of natural regeneration and the presence of multi-layered and multi-aged stands. It is possible that this mitigation measure may be refined during permitting with the USACE,

RWQCB, and CDFW to be equally or more effective, in which case the refinements required by these resource agencies would be implemented.

SUMMARY AND CONCLUSION

With implementation of BMPs, compliance with VHP conditions, and payment of VHP fees, impacts of VHP-covered Program Renewal activities on riparian habitat are less than significant under CEQA, and no mitigation measures are necessary.

Although BMPs would reduce the magnitude and extent of non-VHP-covered Program Renewal impacts on riparian habitat, residual impacts would remain due to the temporary (short-term degradation) and permanent loss of habitat. Mitigation Measure BIO-12 would be implemented to reduce this residual impact to a less-than-significant level.

As discussed above, riparian vegetation in some work sites would include herbaceous vegetation rather than woody vegetation. Compared to woody riparian vegetation dominated by trees and shrubs, such vegetation regenerates quickly and generally provides relatively low functions and values for wildlife. As a result, impacts of Program Renewal activities on non-wetland, herbaceous streambank vegetation are less than significant, and no mitigation for such impacts is required.

Impact BIO-2B: Loss or Disturbance of Non-Riparian/Non-Wetland Sensitive Plant Communities (Less than Significant)

IMPACT ASSESSMENT

Sensitive plant communities (see "Sensitive Natural Communities, Vegetation Alliances, and Habitats" above) that could be impacted by Program Renewal activities, other than riparian communities (addressed under Impact BIO-2A above) and wetland communities (addressed under Impact BIO-3 below) can occur within or adjacent to maintenance activity areas within the following VHP land cover types: oak woodlands (including valley oak woodland, mixed oak woodland and forest, blue oak woodland, and coast live oak forest and woodland), serpentine habitats (including serpentine rock outcrop/barrens, serpentine bunchgrass grassland, and mixed serpentine chaparral), non-serpentine native grassland, coyote brush scrub, northern coastal scrub/Diablan sage scrub, and northern mixed chaparral/chamise chaparral. Estimates of temporary and permanent impacts of Program Renewal activities within these communities are as follows:

- Impacts to oak woodland communities would occur in upland locations where vegetation adjacent to channels is dominated by oaks. Approximately 5 acres of oak woodland would be impacted by the Program Renewal (Table 3.4-6). Approximately 60 percent of Program Renewal impacts within oak woodland habitats (3 acres) would be temporary in that they would not preclude the regeneration of the existing vegetation.
- Projected activities would occur very close to serpentine communities (Figure 3.4-2), but no direct impacts within serpentine bunchgrass habitat or any other serpentine land cover type would occur under the Program Renewal. However, these communities occur adjacent to Program Renewal work locations, and indirect effects can potentially occur.

- Because the majority of the Program Renewal's impacts will occur within existing PMAs (for sediment removal, aquatic herbicide application, and vegetation management) where Program Renewal activities have been ongoing for many years, as well as within areas where maintenance occurs annually (for mechanical mowing and hand weed abatement), the potential for maintenance activities to result in the loss of non-serpentine native grassland, coyote brush scrub, northern coastal scrub/Diablan sage scrub, and northern mixed chaparral/chamise chaparral land cover types is expected to be very limited, if such impacts occur at all.

As described above under "Impacts on Sensitive Natural Communities", Program Renewal activities may affect sensitive plant communities due to direct or indirect disturbance of vegetation and the disturbance, modification, or destruction of habitat. During any bank stabilization, sediment removal, vegetation management, and animal conflict management activity that would occur in or adjacent to sensitive habitats, equipment use, vehicle traffic, and worker foot traffic may result in the injury or mortality of individual plants. These activities could result in death, altered growth, or reduced seed set through physically breaking, crushing, wilting, or uprooting plants, and the compaction of soil by heavy equipment could damage plant roots. In addition, vegetation management activities and the creation of access routes and staging areas may result in the mechanical or physical removal of vegetation as a result of off-target herbicide contact via drift.

As discussed under "Environmental Setting" above, sensitive plant communities are often of limited distribution, and frequently support special-status species or high numbers of common species. Thus, the conservation of these natural communities is integral to maintaining biological diversity. Program Renewal impacts to these communities would be extremely limited. No direct impacts would occur within serpentine habitats; any effects on these habitats would be due to indirect impacts such as dust, off-target herbicide application, or nitrogen deposition (the latter is discussed in additional detail below). Direct impacts to non-serpentine native grassland, coyote brush scrub, northern coastal scrub/Diablan sage scrub, and northern mixed chaparral/chamise chaparral land cover types are expected to be very limited, if such impacts occur at all. Further, permanent impacts to 2 acres of oak woodlands, and temporary impacts to 3 acres of these woodlands, are extremely limited relative to the widespread distribution of this community in the Program Renewal Area. Due to the limited extent of Program Renewal impacts on sensitive oak woodlands, serpentine habitats, non-serpentine native grassland, coyote brush scrub, northern coastal scrub/Diablan sage scrub, and northern mixed chaparral/chamise chaparral relative to their regional distributions, Program Renewal activities would not result in any substantial decline in these communities, or the plant and wildlife species they support, in the region. As a result, these impacts would be less than significant under CEQA.

Additional indirect effects of Program Renewal activities on sensitive serpentine communities can occur due to nitrogen emitted by maintenance vehicles and equipment. Such nitrogen can fertilize serpentine soils and allow nonnative grasses and forbs that would not typically be able to colonize (at least robustly) serpentine habitats to become established and outcompete serpentine plants. There is some potential for nitrogen emitted by maintenance vehicles and equipment to contribute to significant cumulative nitrogen deposition impacts on serpentine habitats located downwind of areas where the nitrogen is emitted.

APPLICABLE BEST MANAGEMENT PRACTICES

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on sensitive vegetation communities:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread of Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants. For activities adjacent to serpentine communities, equipment and tools will be cleaned and sanitized prior to arrival on the site, footwear will be cleaned and disinfected, work will be scheduled to avoid rainy periods as feasible, and erosion control and revegetation materials will be clean with a low risk of *Phytophthora* contamination.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and habitat requirements of special-status plants.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-36: Dust Management** requires implementation of measures to reduce dust within and adjacent to work areas, including watering exposed surfaces, covering haul trucks, sweeping streets, and limiting vehicle speeds.
- **BMP REVEG-1: Seeding** would ensure that exposed soils will be stabilized with native seed to prevent erosion.

Valley Water commits to implementing BMP GEN-8 and avoiding all direct impacts on serpentine communities and minimizing indirect impacts on these communities.

In addition, for VHP-covered activities, compliance with the following habitat plan conditions will reduce impacts on sensitive natural communities in the Program Renewal Area:

- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization,** will help to avoid and minimize Program Renewal impacts on serpentine habitats.

- **Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

However, with the implementation of BMP GEN-8 and Valley Water's commitment to avoiding direct impacts on serpentine habitats, compliance with Condition 13 is not anticipated to be needed.

The VHP mitigates nitrogen deposition impacts via the payment of nitrogen deposition fees for new vehicle trips. Maintenance activities, such as those under the Program Renewal, are not subject to the payment of these fees; however, these fees are intended to fund all necessary nitrogen-related mitigation for impacts of all VHP-covered activities, including activities that are and are not subject to the payment of nitrogen deposition fees. Therefore, impacts of nitrogen emissions of VHP-covered Program Renewal activities are mitigated by the VHP even though the Program Renewal's nature does not necessitate payment of VHP nitrogen deposition fees.

Valley Water will pay VHP fees for impacts on oak woodlands, non-serpentine native grassland, coyote brush scrub, northern coastal scrub/Diablan sage scrub, and northern mixed chaparral/chamise chaparral, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County, including targeted management of non-serpentine native grassland, chaparral and northern coastal scrub, and oak woodland communities by the VHP's Conservation Strategy (ICF International 2012). Coyote brush scrub is not a targeted community type but is preserved by the Habitat Agency in the course of meeting other requirements (ICF International 2012). During implementation of the VHP, the Habitat Agency will protect at least 17,100 acres of oak woodland habitats, including the acquisition of 1,700 acres of valley oak woodland, 7,100 acres of mixed oak woodland and forest, 2,900 acres of coast live oak woodland and forest, 1,100 acres of blue oak woodland, and 80 acres of foothill pine-oak woodland (ICF International 2012). In addition, the Habitat Agency will protect at least 2,500 acres of chaparral and northern coastal scrub and acquire at least 400 acres of northern mixed chaparral/chamise chaparral and at least 1,400 acres of northern coastal scrub/Diablan sage scrub. Specific acquisition targets are not established for native grasslands or coyote brush scrub.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. The majority of impacts of VHP-covered Program Renewal activities on sensitive natural communities would be less than significant under CEQA due to the limited extent of impacts on these communities relative to their regional distributions. However, due to the sensitivity of serpentine habitats in the region, to ensure that any residual impacts of Program Renewal activities on serpentine habitats are reduced to less-than-significant levels, Valley Water will implement Mitigation Measure BIO-1, which specifies the payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for VHP-covered (and non-VHP-covered) activities to reduce effects of nitrogen deposition. With the implementation of BMPs, compliance with applicable

VHP conditions, and payment of VHP impact fees (including nitrogen deposition fees as specified in Mitigation Measure BIO-1), direct and indirect effects of the Program Renewal on sensitive natural communities would be effectively avoided and minimized.

Activities Not Covered under the VHP

Maintenance activities located in tidal portions of the Program Renewal Area would not result in direct or indirect impacts on oak woodlands, serpentine habitats, non-serpentine native grassland, coyote brush scrub, northern coastal scrub/Diablan sage scrub, or northern mixed chaparral/chamise chaparral, as these communities do not occur within tidal habitats in the Program Renewal Area.

Herbicide application, which is not covered under the VHP, would be avoided directly in serpentine areas per BMP GEN-8, and indirect impacts would be minimized by observing an appropriate non-disturbance buffer around serpentine areas. Thus, with the implementation of BMPs, impacts of herbicide application on sensitive vegetation communities would be effectively minimized. No mitigation measures are necessary.

The majority of impacts of non-VHP-covered Program Renewal activities on sensitive natural communities would be less than significant under CEQA due to the limited extent of impacts on these communities relative to their regional distributions. However, Valley Water will implement Mitigation Measure BIO-1, which specifies payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for all Program Renewal activities (regardless of VHP coverage) to reduce effects of nitrogen deposition. With the implementation of BMPs and Mitigation Measure BIO-1, direct and indirect effects of the Program Renewal on sensitive natural communities habitats would be effectively avoided and minimized.

SUMMARY AND CONCLUSION

The majority of impacts of Program Renewal activities on sensitive natural communities would be less than significant under CEQA due to the limited extent of impacts on these communities relative to their regional distributions, regardless of VHP coverage. However, Valley Water will implement Mitigation Measure BIO-1, which specifies payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy for all Program Renewal activities (regardless of VHP coverage) to reduce effects of nitrogen deposition. With the implementation of BMPs, compliance with applicable VHP conditions and payment of VHP land cover fees (for VHP-covered activities), and payment of VHP nitrogen deposition fees through the Habitat Agency's Voluntary Fee Payments Policy (regardless of VHP coverage) as specified in Mitigation Measure BIO-1, effects of the Program Renewal on sensitive natural communities habitats would be effectively avoided and minimized.

Impact BIO-3: A substantial adverse effect on State or federally protected wetlands and waters through direct removal, filling, hydrological interruption, or other means (Less than Significant with Mitigation)

Impact BIO-3: Impacts on State or Federally Protected Wetland and Aquatic Habitats (Less than Significant with Mitigation)

IMPACT ASSESSMENT

Maintenance activities associated with the Program Renewal would result in the short-term, but repetitive, disturbance of wetland (i.e., coastal and valley freshwater marsh, seasonal wetland, tidal salt marsh, and tidal brackish marsh) and aquatic (i.e., riverine, open water, pond, tidal, and intertidal) habitats that provide valuable habitat for fish and wildlife. As described under "Impacts on Instream Aquatic and Wetland Communities" above, these activities could result in the placement of fill, hydrological interruption (e.g., dewatering or diversion), alteration of bed and bank, degradation of water quality (e.g., increased sedimentation and turbidity, herbicide contamination), and other direct impacts. Impacts on special-status animal species resulting from disturbance or loss of wetland and aquatic habitat are addressed separately under Impact BIO-1 above.

Table 3.4-5 provides a summary of Program Renewal impacts within nontidal vegetated wetlands (coastal and valley freshwater marsh and seasonal wetland), tidal vegetated wetlands (tidal salt marsh and tidal brackish marsh), nontidal aquatic habitat (riverine), and tidal aquatic habitat (tidal and intertidal), and Table 3.4-6 provides a summary of Program Renewal impacts within northern coastal salt marsh and seasonal wetlands (which are a subset of the impact acreages provided in Table 3.4-5, and are not additive to those impacts). These impacts are summarized as follows:

- The Program Renewal will impact an estimated 422.4 acres of nontidal vegetated wetlands (coastal and valley freshwater marsh and seasonal wetland), and 21.6 acres of tidal vegetated wetlands (tidal salt marsh and tidal brackish marsh). The majority of these impacts (421.4 acres of nontidal impacts and almost all tidal impacts) would be temporary.
    - Of the impacts on tidal vegetated wetlands, Program Renewal activities would impact approximately 10 acres of northern coastal salt marsh habitat (approximately 9 acres of which would be temporary)
    - Of the impacts on nontidal vegetation wetlands, Program Renewal activities would impact 4 acres of seasonal wetlands (almost all temporary).
- The Program Renewal will impact an estimated 105.7 acres of nontidal aquatic (riverine) habitat, and 8.3 acres of tidal aquatic (tidal and intertidal) habitat. The majority of these impacts (104.7 acres of nontidal impacts and almost all tidal impacts) would be temporary.

It is expected that all of these wetlands will be waters of the state regulated by RWQCB, and the USACE will regulate most (or possibly all) of these wetlands as waters of the U.S. because they will have connectivity downstream. However, the USACE may also determine that certain wetlands that do not have connectivity to navigable waters, and possibly some

ephemeral drainages, are not waters of the U.S. As necessary, Valley Water will coordinate with the USACE to determine whether any wetlands or streams impacted by Program Renewal activities are not jurisdictional waters of the U.S.

Wetlands serve a variety of important functions, such as sediment stabilization, sediment/toxicant retention, nutrient removal/transformation, and aquatic and terrestrial wildlife species habitat. These functions may be adversely affected as a result of sediment removal, vegetation management, bank stabilization, and other Program Renewal activities.

Valley Water studies have found that wetland vegetation in some areas often quickly re-establishes following sediment removal activities. The *Instream Wetland Vegetation Regrowth Study* (Rankin and Hillman 2000) found 65 percent and 98 percent average regrowth within 1 and 2 years, respectively, after 1997 sediment removal at six non-tidal freshwater study sites. Average regrowth on two tidal study sites was less, at 21 percent and 29 percent after one and two years, respectively. The pattern of rapid re-establishment, with greater rates in non-tidal than in tidal areas, was supported by regrowth study results on four additional 1998 sediment removal sites. After one year, those sites supported more non-tidal wetland than was present before sediment removal and almost 70 percent of the tidal wetland that was present before sediment removal.

Vegetation dominance and quality (as represented by vegetation type, total percent cover of vegetation, and relative percent cover of native and nonnative species) were similar between pre- and post-project years on both sediment removal work sites and reference sites on which sediment removal had not been conducted for several years. At most sites, however, some vegetation shifts did occur. Most shifts were neutral or positive, from the perspective of long-term effects on native communities, including full or partial transition from one native-dominated vegetation type to another, disappearance of a nonnative vegetation type, or increased total percent cover. Potentially negative changes occurred less frequently, including slightly increased invasive species cover, appearance or increase in amount of a nonnative vegetation type, and decrease in total percent cover.

The *Instream Wetland Vegetation Regrowth Study* (Rankin and Hillman 2000), as well as anecdotal observations by Valley Water biological and vegetation management staff, indicate that wetland extent and species composition are affected by vegetation management. Herbicide spraying likely reduces the amount of the target vegetation present (mostly cattails) in freshwater and tidal wetlands in years following the treatment. By targeting perennial emergent vegetation with herbicides, which kill the entire plant, other wetland vegetation types, such as other herbaceous wetland species and nonnative annuals, appear to be favored. Herbaceous wetland vegetation also benefits from the targeted removal of woody riparian saplings, either by herbicide or hand removal, which would otherwise shade out wetland plants.

The study area for the *Instream Wetland Vegetation Regrowth Study* mostly included leveed and excavated channels in lower valley sites where work had been done previously. Therefore, the results of that study are not necessarily applicable to the new work areas, especially higher-elevation areas where sediment removal has not previously been performed. Notably, species composition in these higher-elevation areas is different, and these species are likely much less adapted to disturbance from typical Valley Water maintenance activities. Furthermore, these studies occurred during wet years, and their applicability during drought years is unknown.

Based on this information, the vast majority of impacts to freshwater and tidal marsh in the Program Renewal Area would be short-term (as reflected in the acreages provided in Tables 3.4-4 and 3.4-5), because vegetated marsh would restore to existing conditions within 1-2 years following maintenance activities. Because tidal and nontidal stream systems in the Program Renewal Area are dynamic, the extent of wetland habitats changes constantly as part of natural processes, and maintenance activities can be similar to the natural changes experienced by these communities. In addition, flows in the channel will wash away any minor sedimentation or changes in topography that result from maintenance activities, restoring the channel to typical conditions following the completing of the work. Further, no planting or restoration within these areas is likely to be needed (or would typically be prescribed, such as under a Mitigation and Monitoring Plan) because wetland species such as cattails, bulrush, and pickleweed produce airborne seeds that re-establish quickly following disturbance. Due to these combined factors, temporary impacts of the Program Renewal on instream freshwater wetlands (i.e., coastal and valley freshwater marsh) and tidal wetlands (i.e., northern coastal salt marsh) would be less than significant under CEQA. However, permanent impacts that result in the loss of these habitats would be considered significant under CEQA because it would result in the loss of ecologically valuable wetlands.

Program Renewal impacts would also occur within seasonal wetlands. Wetland vegetation within these areas would be likely to restore quickly following impacts, as described for in-stream freshwater and tidal wetlands above, and thus these impacts are expected to be temporary.

Excessive erosion and sedimentation that occur a result of maintenance activities would be considered significant under CEQA if they lead to the permanent loss of wetlands (e.g., due to permanent changes in topography, or because the disturbance does not allow revegetation, or promotes the revegetation of nonnative vegetation).

For northern coastal salt marsh habitat, if Program Renewal impacts (typically from heavy equipment) compact the soils sufficiently (e.g., 6–12 inches), this can prevent pickleweed and other native marsh vegetation from coming back in those areas. This would result in the permanent conversion of marsh habitat to tidal aquatic habitat, which would be a significant impact under CEQA due to the loss of vegetated wetlands.

Bank repair would result in permanent impacts to less than 1 acre of nontidal aquatic habitat under the Program Renewal; all other Program Renewal impacts on tidal and nontidal aquatic habitats would be temporary (Table 3.4-5). This would result in the permanent conversion of aquatic habitat to developed areas, which would be a significant impact under CEQA due to the loss of habitat for aquatic plant and animal communities. Open-water aquatic habitat that is temporarily impacted by maintenance activities would be restored to pre-impact conditions following temporary impacts of maintenance activities. However, as discussed under “Impacts on Instream Aquatic and Wetland Communities” above, maintenance activities could degrade water quality within these areas. This would be considered a significant impact under CEQA due to the degradation of in-stream aquatic habitats that support sensitive aquatic communities.

The majority of impacts of sediment removal (20 of 28 acres, or 71 percent), herbicide application (337 of 342 acres, or 98 percent), and vegetation management (55 of 72 acres, or 76 percent) on vegetated wetlands will occur within existing PMAs, and the majority of impacts of sediment removal (80 of 112 acres, or 71 percent) will also occur within existing

PMAs (Table 3.4-5). If in-perpetuity mitigation has already been provided for impacts of a particular activity along a given reach (e.g., in a PMA), Program Renewal impacts within these areas are considered less than significant, and no additional mitigation is necessary under CEQA. However, mitigation may be required for conducting a different maintenance activity along that reach. For example, if mitigation was previously provided in perpetuity only for herbicide application along a given reach, no additional mitigation for herbicide application along that reach would be necessary, but mitigation for vegetation management activities along that reach would be necessary.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize Program Renewal impacts on wetlands:

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to minimize work activities within wetted portions of channels.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.

- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.
- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas in tidal locations to avoid and minimize impacts to water quality.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

In addition to Valley Water BMPs, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on wetlands:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Valley Water would also pay VHP fees for VHP-covered impacts in the Program Renewal Area occurring outside of existing PMAs, including land cover fees and specialty fees for impacts to wetlands; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats. The VHP will acquire a minimum of 10 acres of coastal and valley freshwater marsh, 5 acres of seasonal wetlands, 50 acres of ponds and 100 miles of streams (ICF International 2012). Restoration or creation of up to approximately 75 acres of wetlands, 72 acres of ponds, and 10.4 miles of streams in the Reserve System is also anticipated (ICF International 2012). For every 1 mile of streams impacted, 3 miles must be preserved and enhanced (3:1) and 1 mile must be restored (1:1) for a total mitigation ratio of 4:1.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

No VHP-covered activities would impact tidal vegetated wetlands or tidal aquatic habitats, as such impacts would occur outside of the current and future VHP permit area.

The majority of Program Renewal activities will be covered under the VHP once the amendment is approved. VHP impact fees paid by Valley Water for impacts on wetlands and aquatic habitats occurring outside of existing PMAs would contribute to the VHP's conservation Program Renewal, which includes wetland creation and restoration to offset impacts of VHP-covered activities and thus would provide compensatory mitigation for wetland impacts. Thus, with the implementation of Program Renewal BMPs and compliance with applicable VHP conditions to avoid and minimize wetland impacts, as well as the payment of VHP impact fees (including specialty fees for impacts to wetlands) to compensate for temporary and permanent impacts to wetlands, temporary and permanent impacts of VHP-covered Program Renewal activities on wetlands are less than significant under CEQA, and no mitigation measures are necessary.

Activities Not Covered under the VHP

Maintenance activities located in tidal portions of the Program Renewal Area would result in temporary and permanent impacts on vegetated wetlands (tidal salt marsh and tidal brackish marsh) and aquatic habitat (tidal and intertidal) and would not be covered under the VHP. For these and other non-VHP-covered activities, implementation of Program Renewal BMPs would avoid and minimize temporary and permanent impacts on wetlands and aquatic habitats in the Program Renewal Area, including impacts due to the destabilization of soils, the permanent conversion of wetlands to open water habitats or weedy areas, the degradation of water quality, excessive erosion and sedimentation, and the compaction of soils.

For temporarily impacted areas, the implementation of BMP REVEG-1 for nontidal wetlands will ensure that temporarily impacted wetlands revegetate following the impact. For tidal salt marsh, the salinity of this habitat typically restricts weed establishment, and thus seeding (as specified in BMP REVEG-1) is not necessary. Thus, with the implementation of BMPs, temporary impacts of non-VHP-covered activities on vegetated wetlands and aquatic habitats are less than significant under CEQA. No mitigation measures are necessary.

The Program Renewal would also result in permanent losses of tidal and non-tidal vegetated wetlands and aquatic habitats due to direct impacts (e.g., from bank stabilization). Impacts to

these habitats would be significant under CEQA, in the absence of mitigation measures, because of their ecological value to a diversity of plant and animal species. Implementation of Mitigation Measure BIO-13 would be implemented to reduce residual permanent Program Renewal impacts on wetlands to a less than significant level.

Mitigation Measure BIO-13: Compensatory Mitigation for Permanent Impacts to Wetlands and Aquatic Habitats

The Program Renewal's compensatory mitigation package, which is detailed in Chapter 10 of the SMP Manual, shall be implemented by Valley Water to compensate for non-VHP-covered permanent new impacts (i.e., impacts that do not fall within an existing PMA for the activity being performed) on wetlands and aquatic habitats. Following the procedure described under "Mitigation Feasibility Assessment, Monitoring, Reporting, and Success Criteria" above and in *Appendix F*, Valley Water would refine the quantification of impacts to wetlands and aquatic habitats that occur during a specific year, tallying the impact totals at the end of the year, and compensatory mitigation will be implemented the following year, in many cases. Exceptions will occur in cases in which compensatory mitigation is incorporated directly into the Program Renewal work areas; in those cases, compensatory mitigation may be implemented during the same year in which impacts occur. Details regarding performance criteria for mitigation, as well as for monitoring and reporting, are described in "Mitigation Feasibility Assessment, Monitoring, Reporting, and Success Criteria" above and in *Appendix F*.

Valley Water will mitigate for permanent impacts to wetlands and aquatic habitats via one or more of the following options:

- Establishing new PMAs for maintenance activities that result in permanent impacts. Mitigation ratios will be 1.5:1 or as determined in a mitigation site plan for nontidal habitats, and 1.2:1 for tidal habitats.
- Use remaining mitigation credits from the Island Ponds (for tidal habitats) and Pajaro Freshwater Wetland (for nontidal habitats) mitigation projects for activities that result in permanent impacts. Mitigation ratios will be 1.5:1 or as determined in a mitigation site plan for nontidal habitats, and 1.2:1 for tidal habitats.
- The removal of concrete from below top of bank, where softscape is left behind in the footprint of the concrete removal work area. Mitigation credit would be calculated based on the area of concrete removed multiplied by 3 for modified channels and unmodified channels.
- For impacts to nontidal wetlands and aquatic habitats, the payment of fees via the Habitat Agency's Voluntary Fee Payments Policy. This option would be subject to consistency with VHP requirements and Habitat Agency approval, and contingent on the Habitat Agency agreeing to use Valley Water's fees to provide mitigation for the resource (e.g., wetlands or aquatic habitats) being affected.

If Valley Water provides the mitigation, Valley Water will conduct monitoring to document that the mitigation is operational and successfully providing the functions and values needed to offset Program Renewal impacts to riparian habitats, as described in detail under "Mitigation Feasibility Assessment, Monitoring, Reporting, and Success Criteria" above and in *Appendix F*. If the Habitat Agency provides the mitigation, the Habitat Agency will conduct any necessary monitoring, and no additional monitoring or documentation is necessary.

It is possible that this mitigation measure may be refined during permitting with the USACE, RWQCB, and CDFW to be equally or more effective, in which case the refinements required by these resource agencies would be implemented.

SUMMARY AND CONCLUSION

With implementation of BMPs, compliance with VHP conditions, and payment of VHP fees, impacts of VHP-covered Program Renewal activities on wetlands and aquatic habitats are less than significant under CEQA, and no mitigation measures are necessary.

Although BMPs would reduce the magnitude and extent of non-VHP-covered Program Renewal impacts on wetlands and aquatic habitats, residual impacts would remain due to the permanent loss of habitat. Mitigation Measure BIO-13 would be implemented to reduce this residual impact to a less-than-significant level.

Impact BIO-4: Interfere substantially with the movement of any native resident or migratory species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Significant and Unavoidable)

Impact BIO-4A: Interference with Wildlife Movement (Less than Significant)

IMPACT ASSESSMENT

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. In the Program Renewal Area, the vegetation communities along streams and rivers often function as environmental corridors in providing habitat for a variety of resident wildlife species.

Stream maintenance activities could alter these communities and corridors by breaking them into smaller, disjunct pieces, a process known as fragmentation. The impact of fragmentation on wildlife is twofold: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity). Program Renewal activities could impact both patch size and connectivity if all vegetation is removed over long reaches of stream channels, or vegetation structure and composition is changed in a way that would create barriers to wildlife movement. By creating open areas or patches with unsuitable vegetation types, maintenance activities could restrict some wildlife species from moving

between distant patches or temporarily eliminate a local population. However, the majority of impacts occurring over the 10-year span of the Program Renewal will be temporary, and located within existing PMAs (i.e., areas where maintenance activities have occurred in the past, and will occur in the future with regular frequency). As a result, Program Renewal impacts within new areas supporting undisturbed plant and wildlife communities will be limited, and the removal of vegetation and/or alteration of vegetation structure over new, long reaches of stream channels will not occur. Thus, the additional incremental impact of Program Renewal activities above and beyond those of SMP-2 will be small and will not result in a significant impact under CEQA.

Because of the urban and agricultural context in which many creeks in the Program Renewal Area occur, the riparian, aquatic, and wetland habitats along these creeks represent the only (or at least highest-quality) habitat available to many species on the Valley floor. As a result, the effects of Program Renewal activities, combined with adverse effects of urbanization and other land uses, could bring about a cumulative impact on habitat connectivity for plants and animals. Program Renewal activities that reduce cover for dispersing individuals, such as the removal of understory vegetation, could inhibit the recolonization of areas from which species have been extirpated for all but the more mobile species (e.g., birds). However, common wildlife species found in certain work locations may be somewhat acclimated to, or may be particularly adaptable to, existing periodic disturbances by maintenance activities that have been ongoing since 2002. In addition, the Program Renewal will help to maintain existing conditions (e.g., emergent wetland vegetation and herbaceous streambank and upland vegetation) in the Program Renewal Area that benefit certain species. Thus, because Program Renewal impacts within new areas supporting undisturbed plant and wildlife communities will be limited; the removal of vegetation and/or alteration of vegetation structure over new, long reaches of stream channels will not occur; and the majority of impacts occurring over the 10-year span of the Program Renewal will be temporary and located within existing PMAs, these impacts are less than significant under CEQA.

BMP ANI-1 specifies the installation of surface barriers (e.g., chain-link fencing, woven geotextiles, and other similar materials) as a method of animal conflict management in areas that may include either the inboard or outboard sides of levees (not both sides) no longer than 300 feet and above the ordinance high water mark. A distance of at least 300 feet would separate each installation. Implementation of this BMP would remove some refugia that would otherwise be used by small animals as they move along levees. Due to the limited extent of these installations and their designated spacing, this impact would be less than significant because the installation of barriers would not remove such large areas of habitat that the movement of wildlife that utilize burrows during movements would be precluded. Wildlife that do not utilize burrows are expected to be able to move over the surface barriers; thus their movements along levees would not be substantially affected.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMPs to avoid and minimize habitat fragmentation impacts:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.

- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands and riparian habitats) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.
- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.

In addition to Valley Water BMPs, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts:

- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.
- **Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County, and which includes enhancement, protection, and management of wildlife corridors and habitat connectivity on a landscape scale.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

Impacts of VHP-covered activities due to habitat fragmentation and interference with wildlife movement are less than significant under CEQA. VHP impact fees paid by Valley Water for VHP-covered impacts would contribute to the VHP's conservation Program Renewal, which includes conservation and management of lands specifically to maintain and enhance connectivity for wildlife movement, and which supports the conservation, enhancement, and management of lands used by breeding animals, further reducing Program Renewal impacts on wildlife movement. Thus, implementation of Program Renewal BMPs, compliance with VHP conditions, and payment of VHP impact fees will reduce impacts of the Program Renewal due to habitat fragmentation and interference with wildlife movement. No mitigation measures are necessary.

Non-VHP-Covered Activities

Impacts of VHP-covered activities due to habitat fragmentation and interference with wildlife movement are less than significant under CEQA. For non-VHP covered activities, implementation of BMPs would reduce impacts of the Program Renewal due to habitat fragmentation by minimizing the extent of maintenance activities and designing individual activities to result in the least impact to stream channels as practicable. Mitigation Measures BIO-12 and BIO-13 would further reduce these impacts by providing compensatory mitigation for impacts to riparian and wetland habitats. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

The Program Renewal would result in the loss of habitat connectivity for plants and animals, as well as the localized loss of populations of common wildlife species. With implementation of Program Renewal BMPs, these impacts would be less than significant under CEQA, regardless of VHP coverage. No mitigation measures are necessary.

Impact BIO-4B: Interference with the Use of Native Wildlife Nursery Sites (Significant and Unavoidable)

IMPACT ASSESSMENT

Maintenance activities occur regularly adjacent to a great blue heron colony located in cottonwoods along Coyote Creek downstream from Montague Expressway in the Program Renewal Area. Maintenance activities are expected to occur within or adjacent to other rookeries in the Program Renewal Area less frequently. Because heron and egret colonies are located along streams and on reservoirs, maintenance activities can potentially result in direct and indirect impacts on nesting individuals and their habitat.

As described under "Impacts on Common and Special-Status Fish and Wildlife" above, maintenance activities may result in direct and indirect effects on birds in the Program Renewal Area, including herons and egrets, due to direct and indirect disturbance and temporary or permanent impacts on suitable habitat. In the absence of BMPs, individual herons and egrets (especially eggs or young in nests) may be killed or injured during maintenance activities due to physical disturbance of nest trees. Activities causing a

substantial increase in noise or visual disturbance near active nest locations may result in nest abandonment, and possibly the loss of eggs or young as a result. Colonies of herons and egrets are more sensitive to disturbance compared to many other nesting birds, as the distress of individual birds can spread throughout the colony. As a result, disturbance of a colony could potentially result in the loss of large numbers of nests with eggs or young, and possibly failure of those adults to breed in a given year.

If herons and egrets abandon their nests during maintenance activities, they may return to a colony in future years once those activities have completed. However, these species are also known to abandon colonies altogether following disturbance (Bousman 2007g, Bousman 2007h, Bousman and Strong 2007a, and Bousman and Strong 2007b). Herons and egrets do not always establish new colonies immediately or nearby when a colony fails, and they may take several years to find a new nesting location, which may or may not be successful (Bousman 2007g, Bousman 2007h, Bousman and Strong 2007a, and Bousman and Strong 2007b). Because populations of these species in the Program Renewal Area are supported by a small number of nesting colonies, a species' local population can decline due to the permanent dispersal of nesting pairs away from a colony, or lower reproductive success by individuals that relocate from a successful colony to inferior nesting sites (such as sites located farther from high-quality foraging habitat, or where nests are subject to higher predation rates) following disturbance.

Maintenance activities could also result in the permanent loss and/or modification of nesting habitat for these species. The removal or modification of trees and other vegetation supporting heron and egret nests can result in a reduction in the number of nests in a colony (by removing available substrate) or cause one or more pairs of birds to abandon the colony due to the changes in habitat conditions.

Because relatively few active colonies of herons and egrets are present in the Program Renewal Area in a given year, and the loss or substantial reduction in size of a nesting colony as a result of maintenance activities would result in a reduction in regional populations, such impacts would be significant under CEQA.

The Program Renewal would not cause significant impacts to any other important native wildlife nursery sites (i.e., areas where breeding is concentrated, such as a pinniped pupping area or seabird colony). No activities are proposed in pinniped pupping areas or close enough to gull or tern colonies or important shorebird nesting areas to disturb colonies of those species. No nursery sites specific to fish are present within the Program Renewal Area, and no impacts to fish nurseries would occur. Impacts on breeding animals, including breeding colonies of animals (e.g., bat maternity colonies and swallow colonies), may occur as described in Impacts BIO-1V, 1Y, and 1Z above, but no breeding areas for the species addressed in those impacts are so large or regionally important that they rise to the level of an "important native wildlife nursery site". Thus, these impacts are less than significant under CEQA, from the perspective of Impact BIO-4B.

APPLICABLE BEST MANAGEMENT PRACTICES AND VHP CONDITIONS

Valley Water will implement the following BMP to reduce impacts on native wildlife nursery sites (specifically, heron and egret nesting colonies) in the Program Renewal Area:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged. A 250-foot buffer is prescribed for active nests of herons and egrets.
- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and appropriate protective measures for nesting birds.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions focus on the protection of the great blue heron, great egret, snowy egret, black-crowned night heron, or their habitat in the Program Renewal Area, as these species are not currently covered under the VHP or listed as fully protected such that VHP Condition 1 would apply.

Valley Water will also pay VHP fees, calculated based on Program Renewal impacts to land cover types, for all VHP-covered activities that require payment of fees. These fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at habitats for native species in Santa Clara County. However, the payment of VHP land cover fees may not have a substantial benefit to the great blue heron, great egret, snowy egret, or black-crowned night heron, as these species are not currently known to make substantive use of Habitat Agency reserves for nesting.

SIGNIFICANCE DETERMINATION AND MITIGATION MEASURES

VHP-Covered Activities

With the implementation of BMPs to avoid disturbance of active nests, impacts of VHP-covered Program Renewal activities on active nests of great blue herons, great egrets, snowy egrets, and black-crowned night herons would be effectively avoided and minimized. No mitigation measures related to disturbance of breeding herons and egrets by breeding-season maintenance activities are necessary.

Residual impacts could remain due to the removal or modification (during the nonbreeding season) of trees and other vegetation supporting active nests within a colony. This could result in a reduction in the number of nests in the colony (by removing substrate supporting existing nests) or cause one or more pairs of birds to abandon the colony due to the changes in habitat conditions. The abandonment of a nesting colony, or a substantial decline in the number of herons and/or egrets using the colony as a result of the Program Renewal (defined as more than 10 percent of the colony size), would result in a substantial adverse effect on the species' populations unless or until a new successful colony is established, because

relatively few active colonies are present in the Program Renewal Area and these species rely on the presence of established colonies for successful breeding. Thus, this impact would be significant under CEQA.

There is no feasible mitigation available to reduce this impact. Valley Water will not remove trees from a heron or egret rookery unless that removal is necessary, so further avoidance of nest trees is infeasible. Because herons and egrets are highly selective about their choice of nesting sites, providing alternative nesting habitat for these species is not expected to be successful. In other locations, efforts to attract nesting herons and egrets to alternative nesting locations using decoys and attractive sound recordings have had variable success. Such efforts have involved great egrets in Louisiana, black-crowned night herons in Tennessee and Long Beach, California, and little blue herons (*Egretta caerulea*) and western cattle-egrets (*Ardea ibis*) in Alabama (Dusi 1985, Crouch et al. 2002). Great blue herons also have been induced to occupy artificial nest platforms in some areas (Ascutney Mountain Audubon Society 2010, Lake County Forest Preserves 2024). In Oakland, an intensive 2-year effort to attract black-crowned night herons and snowy egrets to a new colony location in 2018-2019 was unsuccessful (Lefebvre 2020). It is therefore unlikely that any attempts to mitigate Program Renewal impacts on heron or egret rookeries through habitat modifications or the use of decoys or sound recordings would be successful, and the labor-intensive nature of any such attempts, coupled with the low probability of success, would make such efforts infeasible. Therefore, this impact would be significant and unavoidable.

VHP-covered Program Renewal activities would not cause significant impacts to any other important native wildlife nursery sites (i.e., areas where breeding is concentrated, such as a pinniped pupping area or seabird colony), and no mitigation measures are necessary.

Activities Not Covered under the VHP

With the implementation of BMPs to avoid disturbance of active nests, impacts of non-VHP-covered Program Renewal activities on active nests of great blue herons, great egrets, snowy egrets, and black-crowned night herons would be effectively avoided and minimized. No mitigation measures related to disturbance of breeding herons and egrets by breeding-season maintenance activities are necessary.

Residual impacts could remain due to the removal or modification (during the nonbreeding season) of trees and other vegetation supporting active nests within a colony. This could result in a reduction in the number of nests in the colony (by removing substrate supporting existing nests) or cause one or more pairs of birds to abandon the colony due to the changes in habitat conditions. The abandonment of a nesting colony, or a substantial decline in the number of herons and/or egrets using the colony as a result of the Program Renewal (defined as more than 10 percent of the colony size), would result in a substantial adverse effect on the species' populations unless or until a new successful colony is established, because relatively few active colonies are present in the Program Renewal Area and these species rely on the presence of established colonies for successful breeding. Thus, this impact would be significant under CEQA. However, as discussed for VHP-covered activities, there is no feasible mitigation available to reduce this impact. Therefore, this impact would be significant and unavoidable.

Non-VHP-covered Program Renewal activities would not cause significant impacts to any other important native wildlife nursery sites (i.e., areas where breeding is concentrated, such as a pinniped pupping area or seabird colony), and no mitigation measures are necessary.

SUMMARY AND CONCLUSION

With the implementation of BMPs to avoid disturbance of active nests, impacts of Program Renewal activities on active nests of great blue herons, great egrets, snowy egrets, and black-crowned night herons would be effectively avoided and minimized, regardless of VHP coverage. No mitigation measures related to disturbance of breeding herons and egrets by breeding-season maintenance activities are necessary.

The abandonment of a nesting colony, or a substantial decline in the number of herons and/or egrets using the colony as a result of the Program Renewal (defined as more than 10 percent of the colony size), would result in a substantial adverse effect on the species' populations unless or until a new successful colony is established, because relatively few active colonies are present in the Program Renewal Area and these species rely on the presence of established colonies for successful breeding. Thus, this impact would be significant under CEQA, regardless of VHP coverage. No feasible mitigation to reduce this impact is available; therefore, this impact would be significant and unavoidable.

Program Renewal activities would not cause significant impacts to any other important native wildlife nursery sites (i.e., areas where breeding is concentrated, such as a pinniped pupping area or seabird colony), and no mitigation measures are necessary.

Impact BIO-5: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, such as a Tree Preservation Policy or Ordinance (Less than Significant)[3]

Impact BIO-5: Loss of Ordinance Trees (Less than Significant)

IMPACT ASSESSMENT

For the purpose of this assessment, ordinance trees are defined based on the applicable local ordinance. Often, ordinance trees must meet a minimum size requirement. However, some ordinances are not size-based but species based (e.g., all oaks) and, in some cases, no distinction is made between native and nonnative species. Ordinance-sized trees are common in many of the riparian habitats along the creeks that are maintained by Valley Water, and they are present in some non-instream areas as well. In addition to providing habitat functions and values for common and special-status wildlife species, as described under "Environmental Setting" above, larger trees are particularly valuable because they provide the highest-quality nesting sites for raptors, they may contain cavities that serve as roost sites for bats or nesting/denning sites for other animals, they provide large amounts of coarse

[3] Impact BIO-5 assesses conflicts with local tree ordinances and adopted habitat conservation policies. As mentioned in the regulatory setting, local general plans have policies protecting sensitive biological resources and encouraging habitat restoration. With implementation of BMPs, VHP compliance, and mitigation measures, the previous analyses in this section demonstrate that sensitive biological resources would be sufficiently protected during Program implementation. As such, general conflicts with local general plan policies protecting biological resources are unlikely.

woody debris to the stream ecosystem, and they promote high foliage height diversity, which in turn increases the local diversity of birds. They also provide important shading and aesthetic values. As a result of their high value, such trees are protected by local ordinances of Santa Clara County and a number of municipalities within Valley Water's jurisdiction. Thus, these trees merit special consideration in assessing impacts of the Program Renewal.

Valley Water would remove ordinance-size trees in support of the Program Renewal, and tree removal could occur throughout the Program Renewal Area. Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various cities within the Program Renewal Area either because the ordinance by its terms is not applicable to Valley Water (e.g., it does not apply to tree removal on public property) and/or because of Hall v. Taft (1956) 47 Cal. 2d 177, 189 (which holds that entities operating under mandates set forth by state law, including water districts, are exempt from municipal police power regulation). Therefore, Valley Water's removal of ordinance-sized trees would not conflict with any local tree ordinance, and this impact is less than significant under CEQA. Nevertheless, recognizing the importance of protected trees, Valley Water will compensate for tree removal where required within the riparian habitat. See Impact BIO-2A for discussion on impacts to riparian vegetation, including riparian tree removal, and measures that would compensate for impacts to riparian vegetation (e.g., payment of VHP fees and implementation of Mitigation Measure BIO-11 for non-VHP-covered Program Renewal impacts).

Applicable Best Management Practices

Valley Water will implement the following BMPs to avoid and minimize impacts on the ordinance-size trees in the Program Renewal Area:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.
- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

No VHP conditions apply to compliance with local ordinances.

Significance Determination and Mitigation Measures

As discussed under "Regulatory Setting" and in *Appendix C*, Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various cities within the Program Renewal Area. Therefore, Valley Water's removal of ordinance-sized trees would not conflict with any local tree ordinance, and this impact is less than significant under CEQA. Nevertheless, recognizing the importance of protected trees, Valley Water will compensate

for tree removal where required within the riparian habitat. No mitigation measures are necessary.

SUMMARY AND CONCLUSION

Valley Water would remove ordinance-size trees in support of the Program Renewal, and tree removal could occur throughout the Program Renewal Area. Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various cities within the Program Renewal Area . Therefore, Valley Water's removal of ordinance-sized trees would not conflict with any local tree ordinance, and this impact is less than significant under CEQA. Nevertheless, recognizing the importance of protected trees, Valley Water will compensate for tree removal where required within the riparian habitat. See Impact BIO-2A for discussion on impacts to riparian vegetation, including riparian trees removal, and measures that would compensate for impacts to riparian vegetation, e.g., payment of VHP fees, and implementation of Mitigation Measure BIO-11 for non-VHP covered Program Renewal impacts.

Impact BIO-6: Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional or State Habitat Conservation Plan (Less than Significant)

Impact BIO-6: Conflict with an Adopted Habitat Conservation Plan (Less than Significant)

IMPACT ASSESSMENT

Valley Water is a co-permittee under the VHP, which is an HCP and NCCP. Most of the Program Renewal Area is currently located within the VHP permit area (ICF International 2012). Under an amendment that is expected to be considered for approval in 2026, the VHP permit area would be expanded so that it will include the majority of Program Renewal activities. At that time, Valley Water will comply with all applicable VHP conditions for VHP-covered Program Renewal activities.

All VHP-covered species that may be impacted by the Program Renewal are discussed in this analysis. Similarly, impacts on sensitive habitats, such as stream and serpentine habitats for which the VHP requires specialty impact fees, are discussed in this analysis.

Once the VHP is amended, the Program Renewal will adhere to all applicable VHP conditions and pay applicable VHP fees during maintenance activities, as discussed above. Conditions applicable to the Program Renewal include Conditions 1 (avoid direct impacts to legally protected plant and wildlife species), 3 (maintain hydrologic conditions and protect water quality), 5 (avoidance and minimization for instream operations and maintenance), 12 (wetland and pond avoidance and minimization), 13 (serpentine and associated covered species avoidance and minimization), 15 (western burrowing owl), 16 (least Bell's vireo), 17 (tricolored blackbird), 18 (San Joaquin kit fox), 19 (plant salvage when impacts are unavoidable), and 20 (avoid and minimize impacts to covered plant occurrences). Therefore, once the VHP is amended, the Program Renewal would not be in conflict with the VHP.

Before the VHP is amended, if residual impacts from maintenance activities remain significant under CEQA with the implementation of Valley Water's BMPs, Valley Water will

provide compensatory mitigation for impacts on biological resources, as discussed under *Mitigation Approach* above. Therefore, before the VHP is amended, the Program Renewal would not be in conflict with the VHP.

No other adopted HCPs or NCCPs, or any other approved local, regional, or state HCPs or NCCPs, apply to the Program Renewal.

Five other HCPs have been approved in Santa Clara County (USFWS 2024):

- PG&E Bay Area Operations and Maintenance HCP
- Permanente Site Operations and Maintenance Low-Effect HCP
- Stanford University HCP
- Los Esteros Critical Energy Facility Low-Effect HCP
- Donald Von Raesfeld Power Plant Low-Effect HCP

The Program Renewal does not include any activities that conflict with these HCPs. Aside from the VHP, no NCCPs in Santa Clara County have been approved or are in preparation (CDFW 2024b).

Applicable BMPs and VHP Conditions

No BMPs apply to ensure Program Renewal consistency with HCPs. VHP-covered Program Renewal activities will comply with applicable VHP conditions, as follows:

- **Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species.
- **Condition 3. Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5. Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12. Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.
- **Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization** will help to avoid and minimize Program Renewal impacts on serpentine habitats and associated special-status plants.
- **Condition 15. Burrowing Owl** requires habitat surveys and preconstruction surveys for burrowing owls within mapped survey areas, as well as avoidance measures to protect individuals.
- **Condition 16. Least Bell's Vireo** requires all covered projects within mapped survey areas for this species to conduct habitat surveys and preconstruction surveys and implement avoidance and minimization measures to protect active nests.

- **Condition 17. Tricolored Blackbird** requires habitat surveys and preconstruction surveys for nesting tricolored blackbirds, as well as appropriate avoidance and minimization measures and construction monitoring to protect nesting colonies.
- **Condition 18. San Joaquin Kit Fox** requires habitat surveys, preconstruction surveys, and avoidance of occupied dens to avoid all injury to or death of kit foxes, and to minimize harm or harassment.
- **Condition 19. Plant Salvage when Impacts Are Unavoidable** gives the Habitat Agency the option to salvage seed from VHP-covered special-status plants when impacts cannot be avoided.
- **Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences** requires pre-activity surveys for VHP-covered special-status plant species and revision of the activity design to avoid impacts, if feasible.

For VHP-covered activities, the species protection measures provided in VHP conditions will replace the protections outlined in Valley Water BMPs, where applicable.

Valley Water would also pay VHP land cover fees and specialty fees for VHP-covered impacts on habitats in the Program Renewal Area; these fees would contribute to the VHP's conservation Program Renewal, which includes habitat acquisition, restoration, preservation, and management targeted at those habitats.

Significance Determination and Mitigation Measures

With VHP compliance for VHP-covered activities, impacts associated with conflicts between the Program Renewal and any adopted HCP or NCCP plan are less than significant. No mitigation measures are necessary.

Conclusion

The Program Renewal would not conflict with any adopted HCPs or NCCPs, or with any other approved local, regional, or state HCPs. VHP-covered Program Renewal activities will comply with applicable VHP conditions and pay VHP fees for impacts on habitats in the Program Renewal Area. Thus, any Program Renewal impacts associated with conflicts between the Program Renewal and any adopted HCP or NCCP would be less than significant. No mitigation measures are necessary.

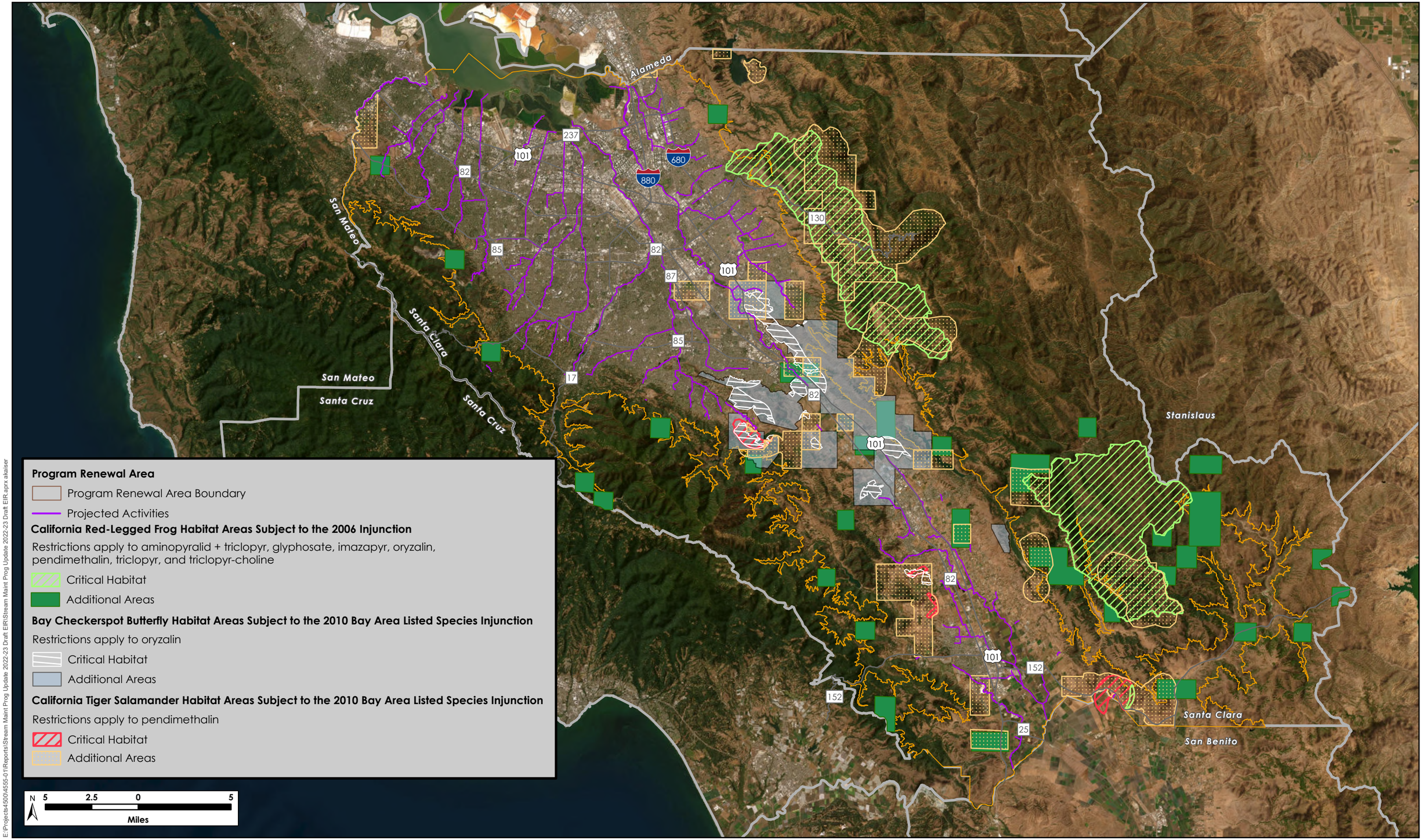

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Figure 3.4-1: Program Renewal Areas Subject to Pesticide Injunctions
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

Program Renewal Area
Santa Clara County Boundary
Mapped Serpentine Soils

Projected Activities

Sediment Removal
In-Stream Vegetation Removal and Aquatic Herbicide Application
Mechanical Mowing
Hand Weed Abatement
Mapped Occurrences of Serpentine-Associated Special-Status Plants

Note: Although there is some overlap between projected activities and mapped serpentine soils, field-verified mapping has confirmed that serpentine habitat is absent from these areas, and no direct impacts of Program Renewal activities on serpentine habitats will occur.

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Figure 3.4-2: Projected Program Renewal Activities and Serpentine Areas
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

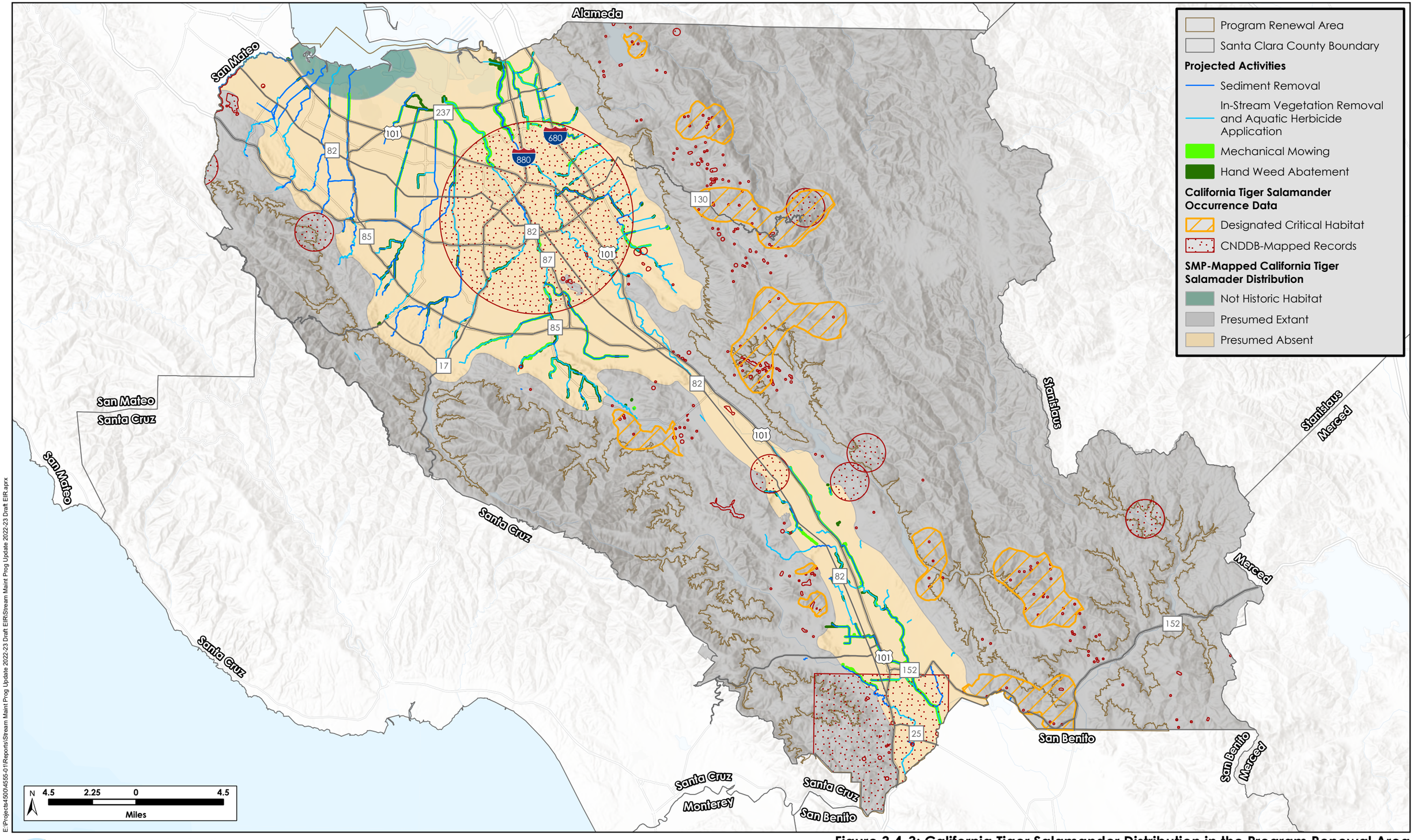

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Figure 3.4-3: California Tiger Salamander Distribution in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

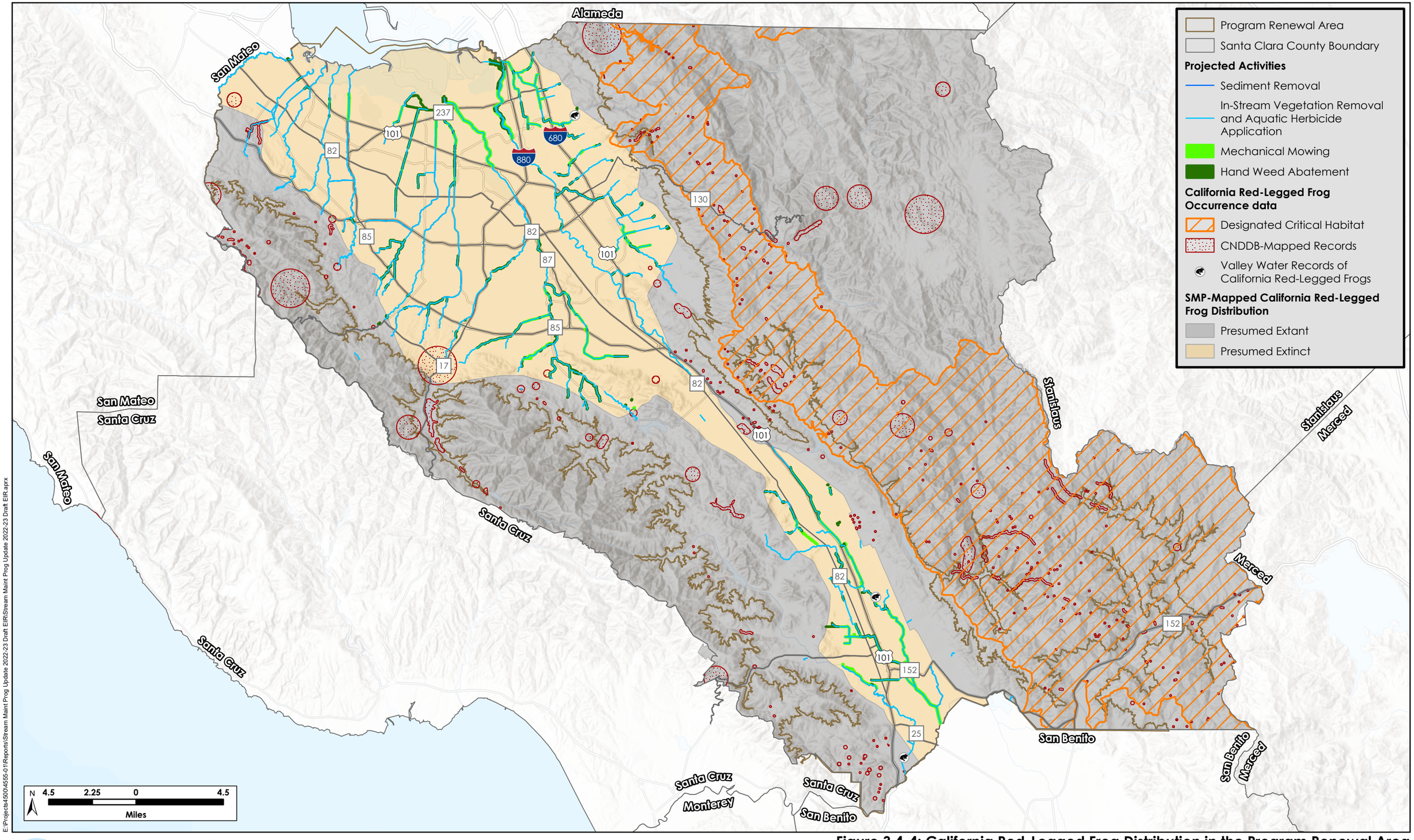

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Figure 3.4-4: California Red-Legged Frog Distribution in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

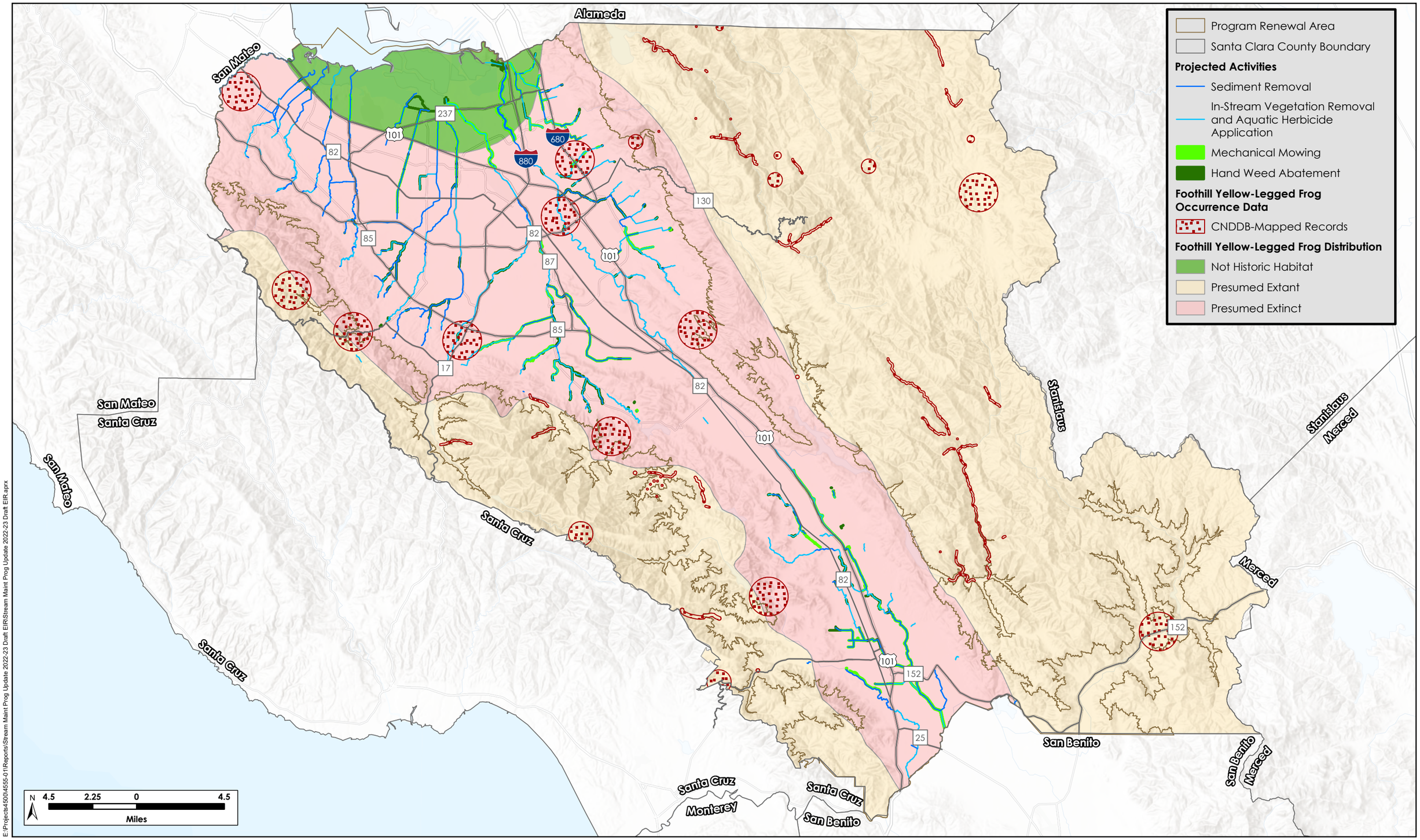

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Figure 3.4-5: Foothill Yellow-Legged Frog Distribution in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

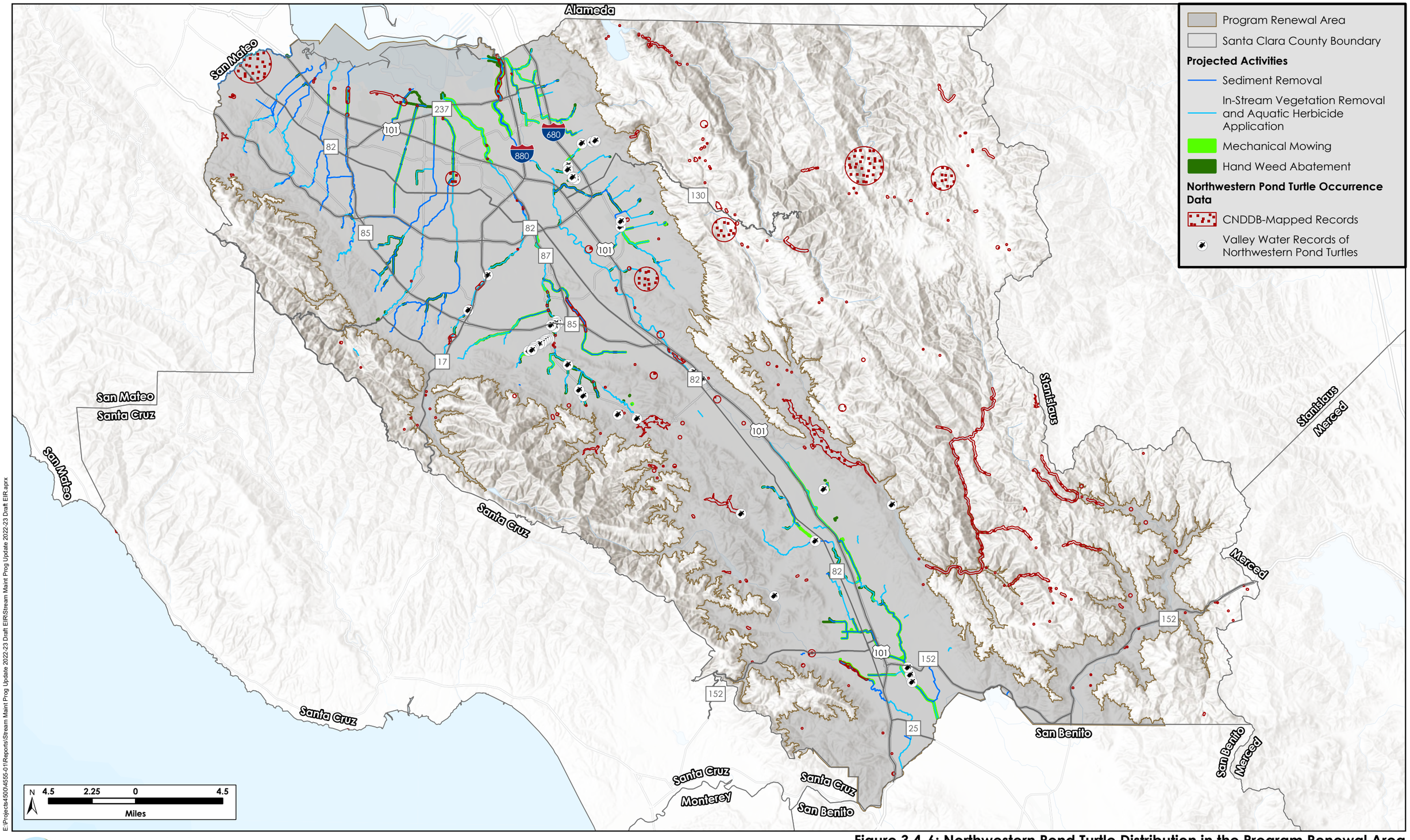

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Figure 3.4-6: Northwestern Pond Turtle Distribution in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

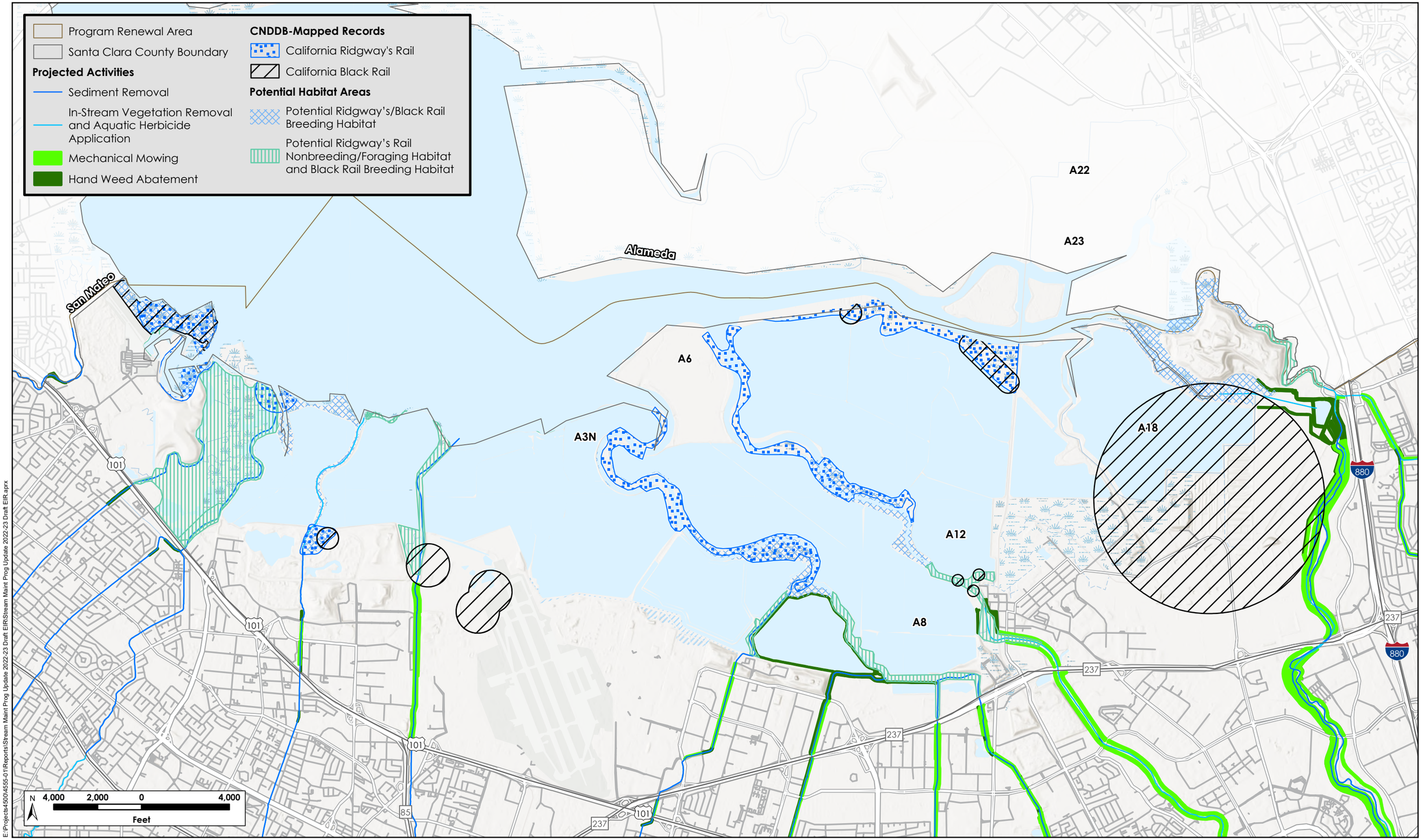

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Figure 3.4-7: Distribution of Tidal Marsh-Associated Special-Status Bird Species in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

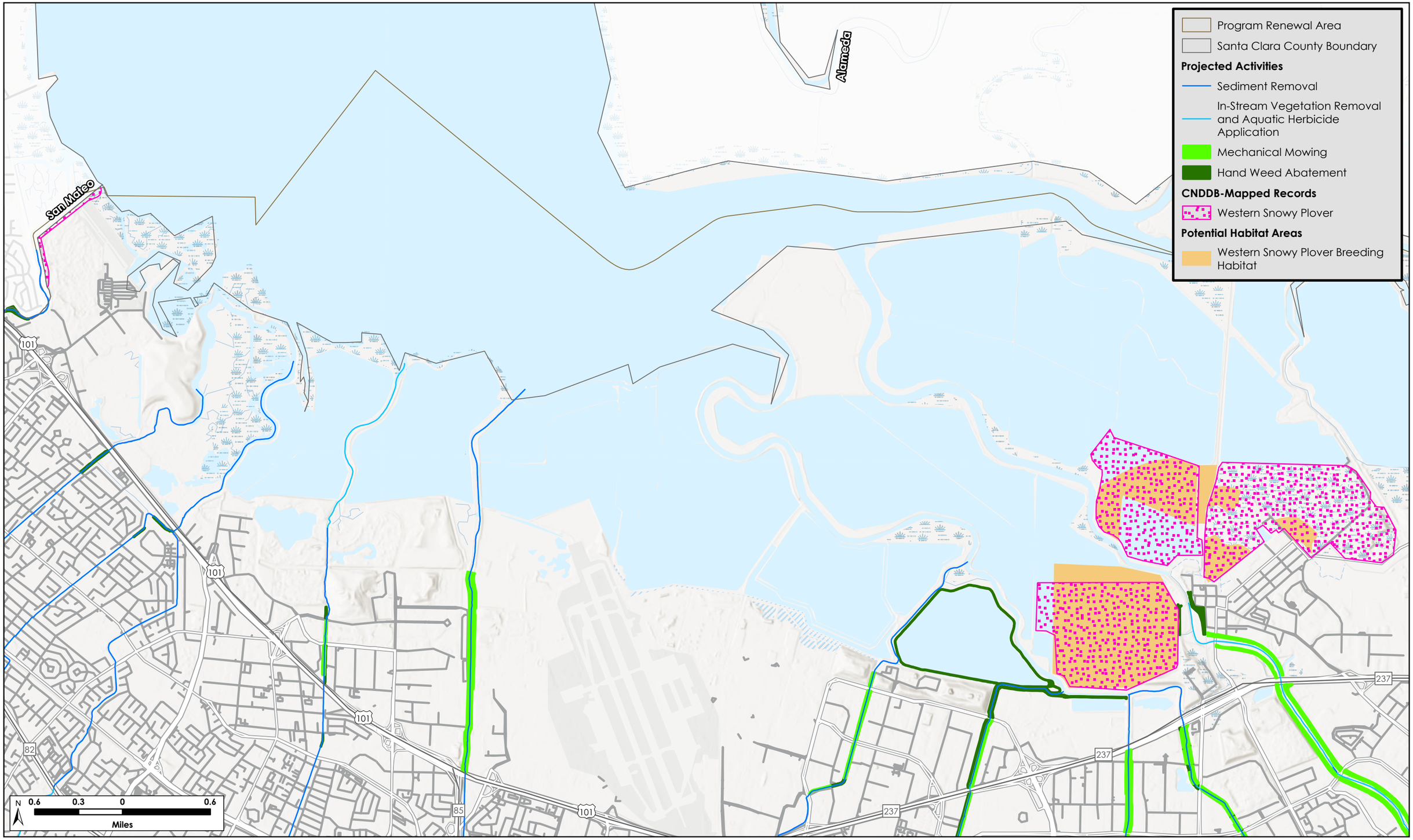

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Figure 3.4-8: Distribution of Western Snowy Plover in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

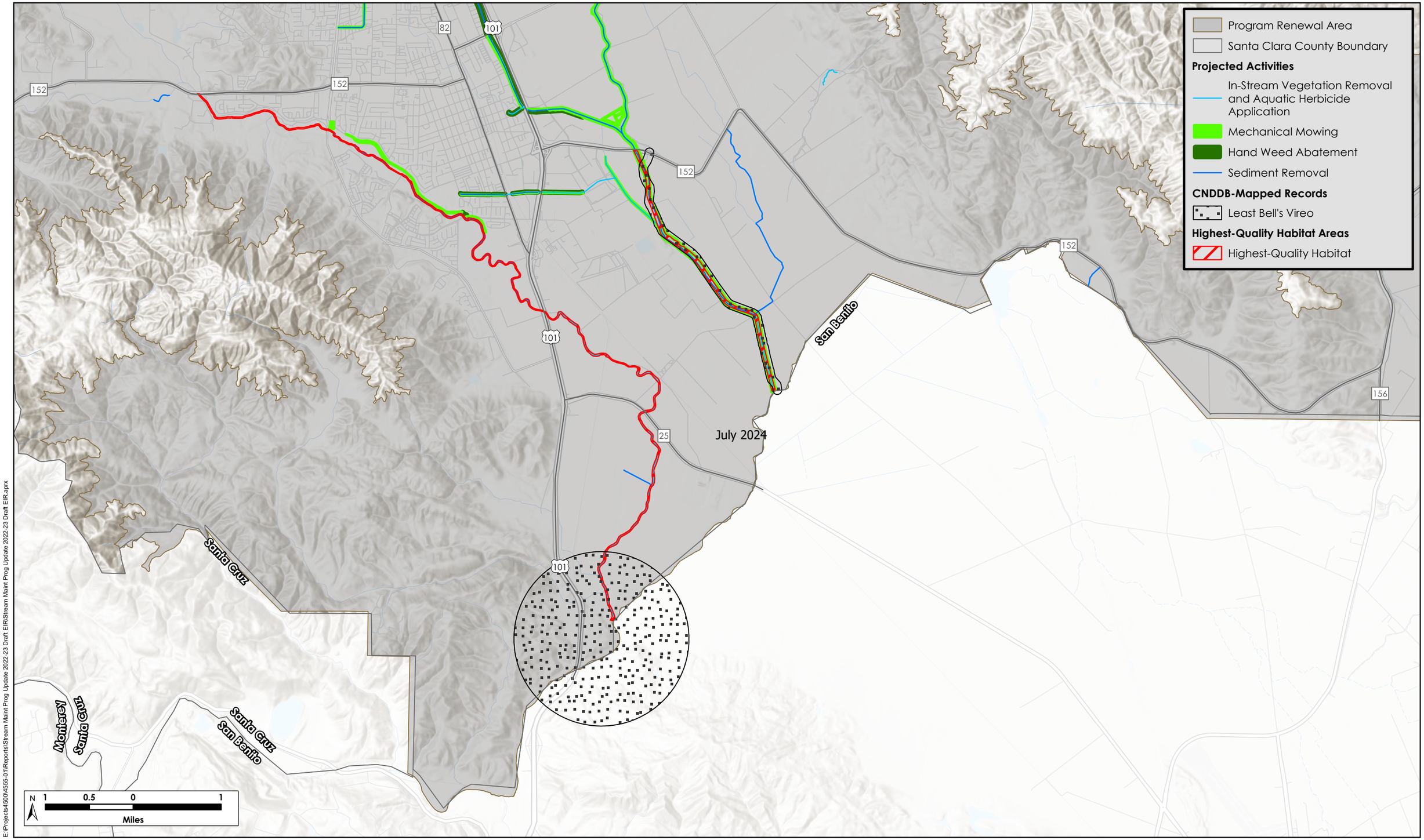

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Figure 3.4-9: Least Bell's Vireo Habitat and Potential for Occurrence in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

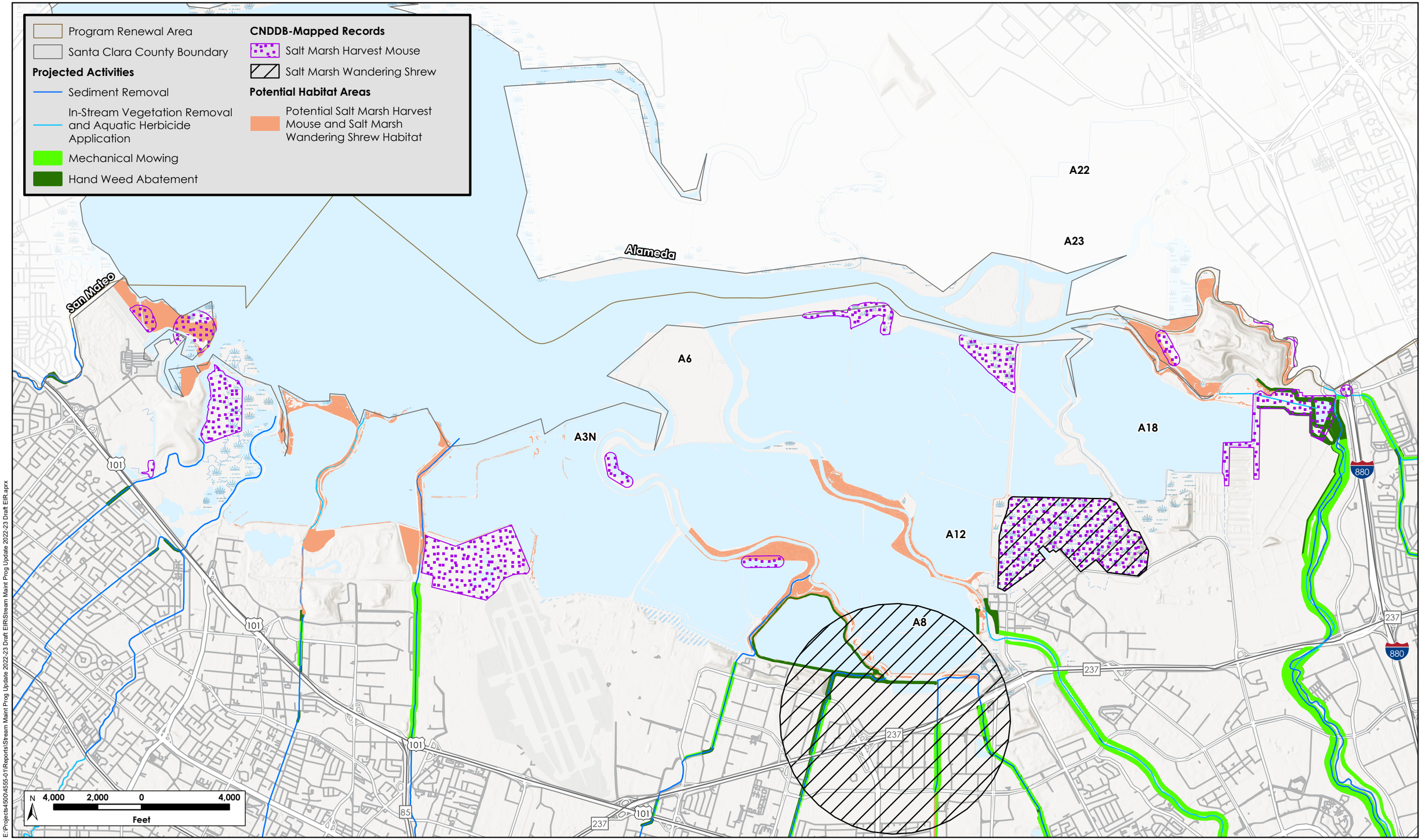

Figure 3.4-10: Distribution of Tidal Marsh-Associated Special-Status Mammal Species in the Program Renewal Area

Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

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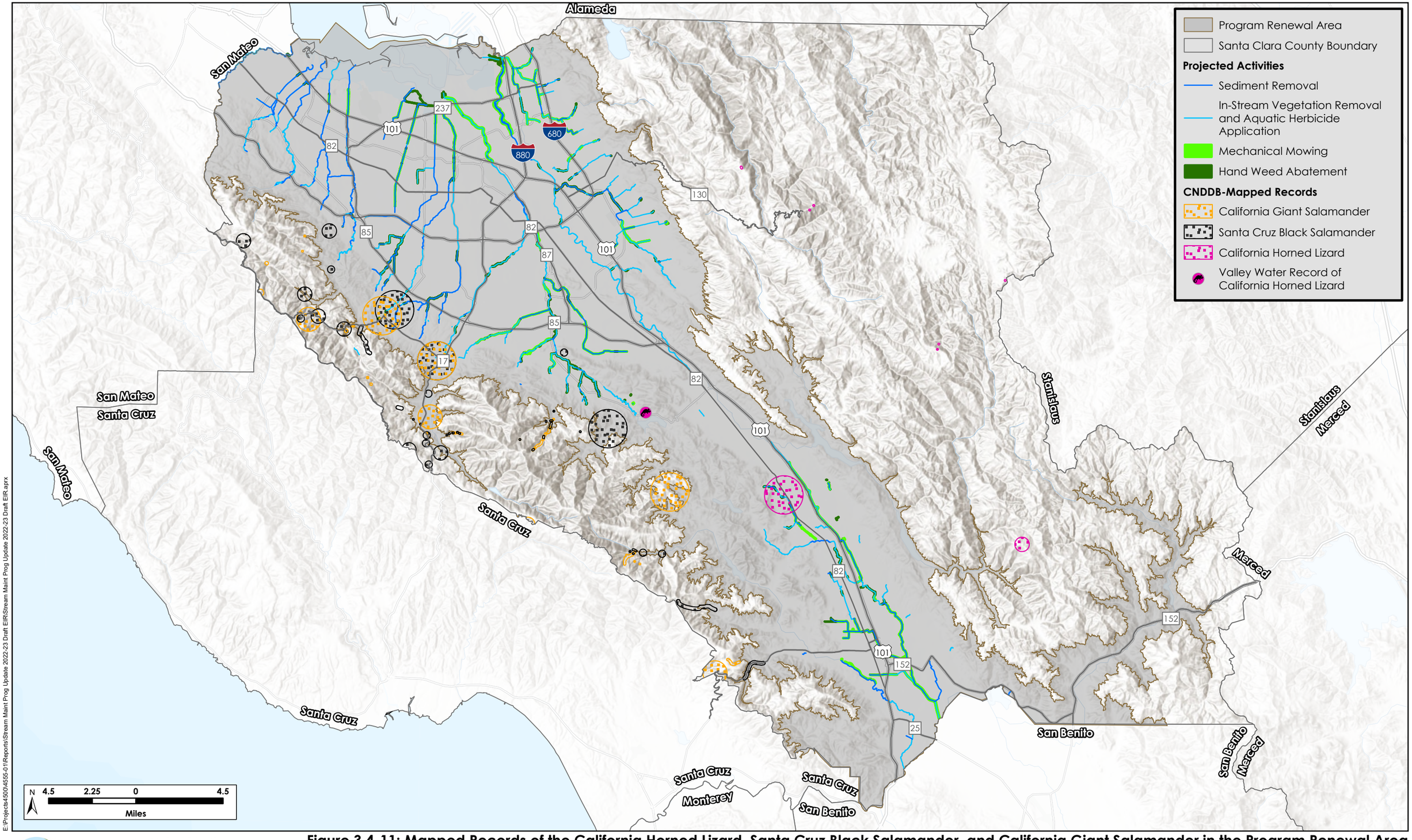

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Figure 3.4-11: Mapped Records of the California Horned Lizard, Santa Cruz Black Salamander, and California Giant Salamander in the Program Renewal Area

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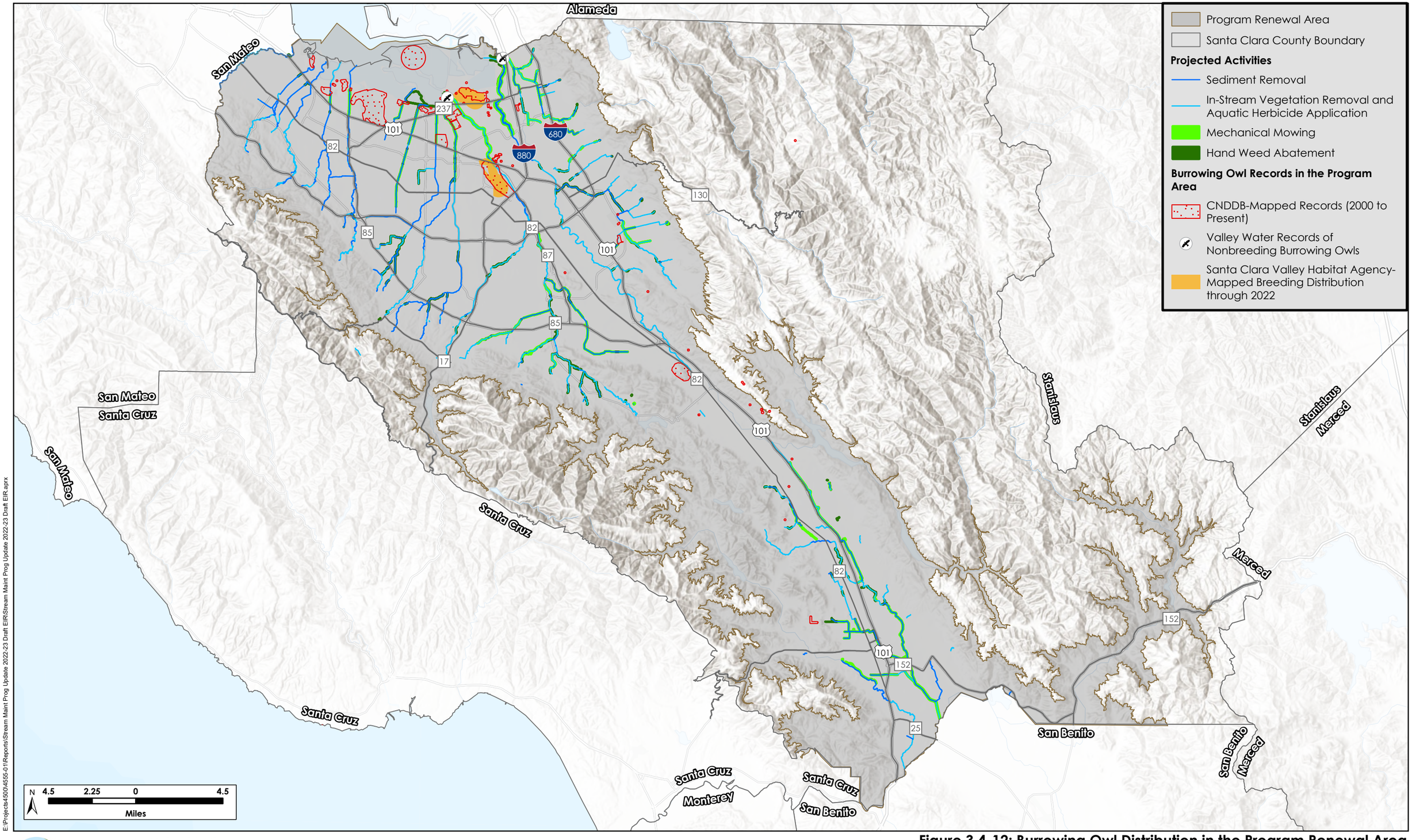

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Figure 3.4-12: Burrowing Owl Distribution in the Program Renewal Area
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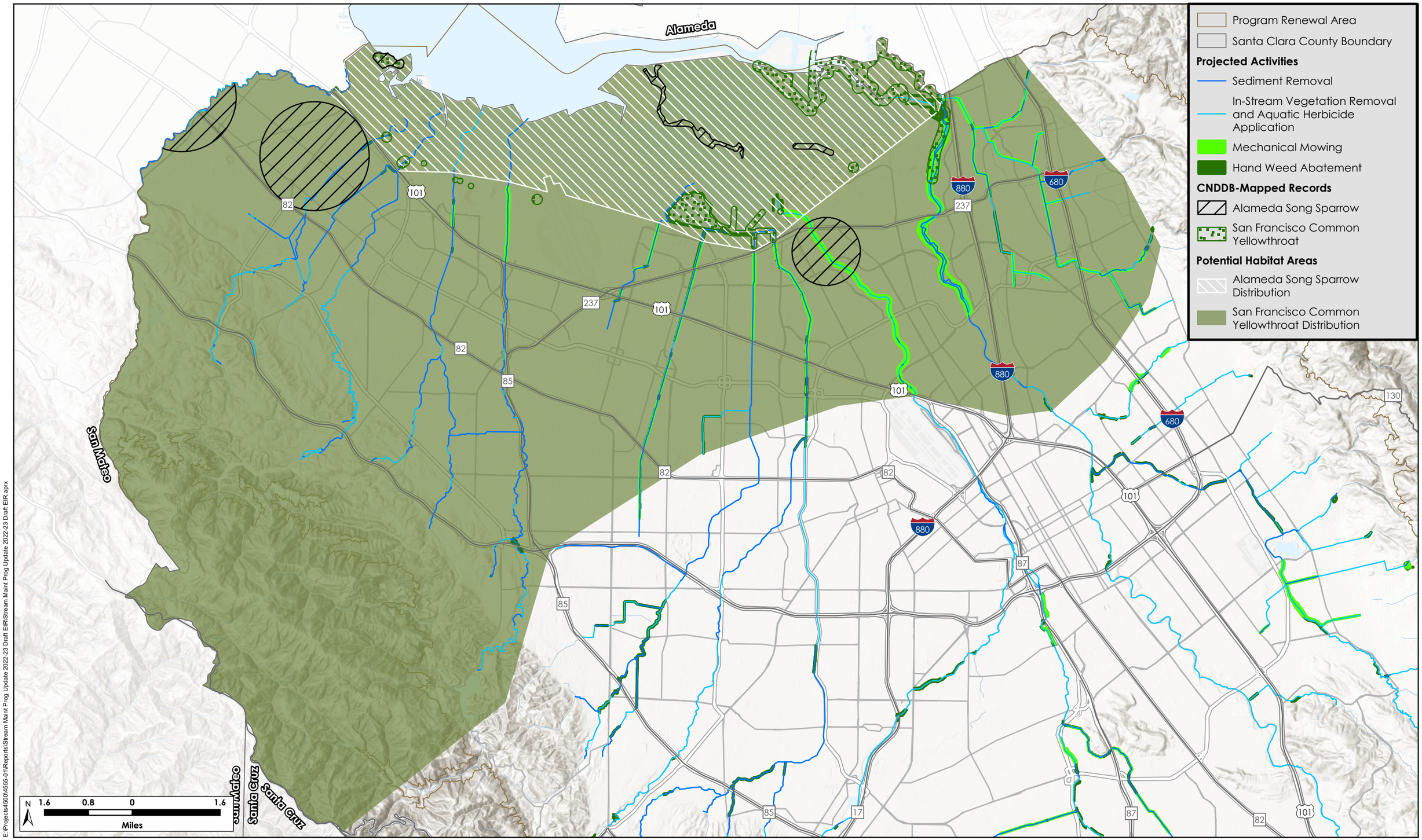

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Figure 3.4-13: Distribution of San Francisco Common Yellowthroats and Alameda Song Sparrows in the Program Renewal Area

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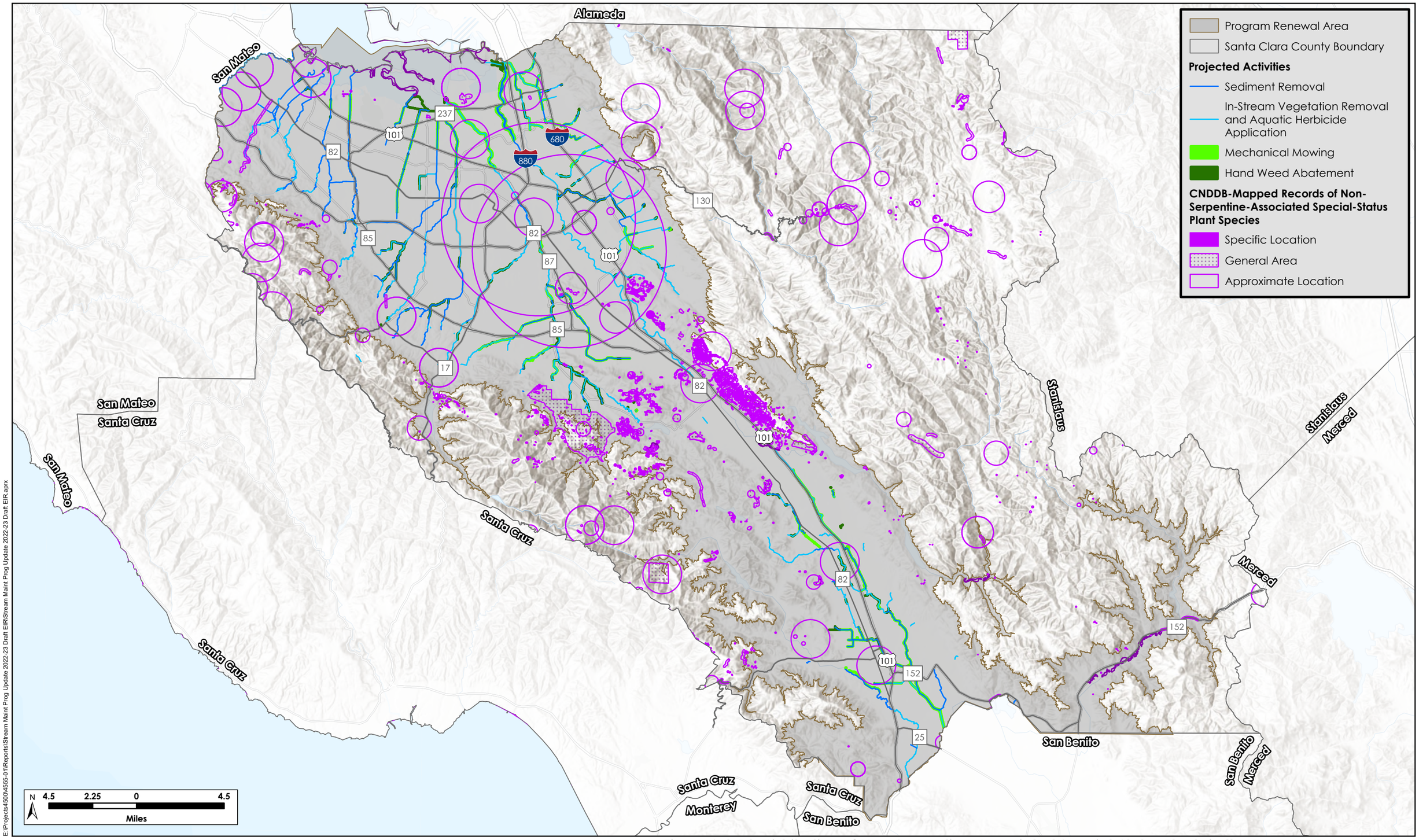

Figure 3.4-14: Distribution of Non-Serpentine-Associated Special-Status Plants in the Program Renewal Area

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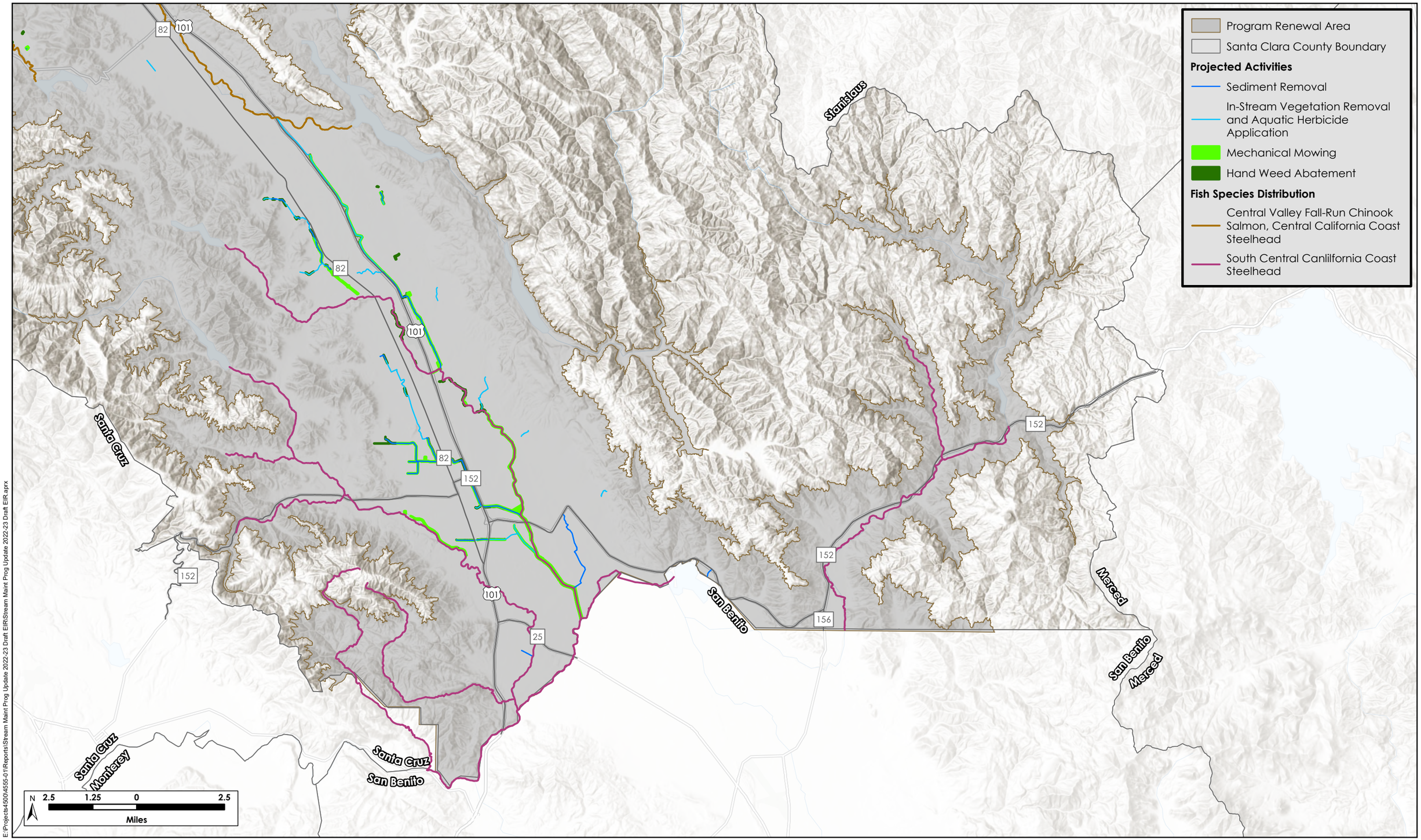

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Figure 3.5-15: Distribution of Threatened and Endangered Fish in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

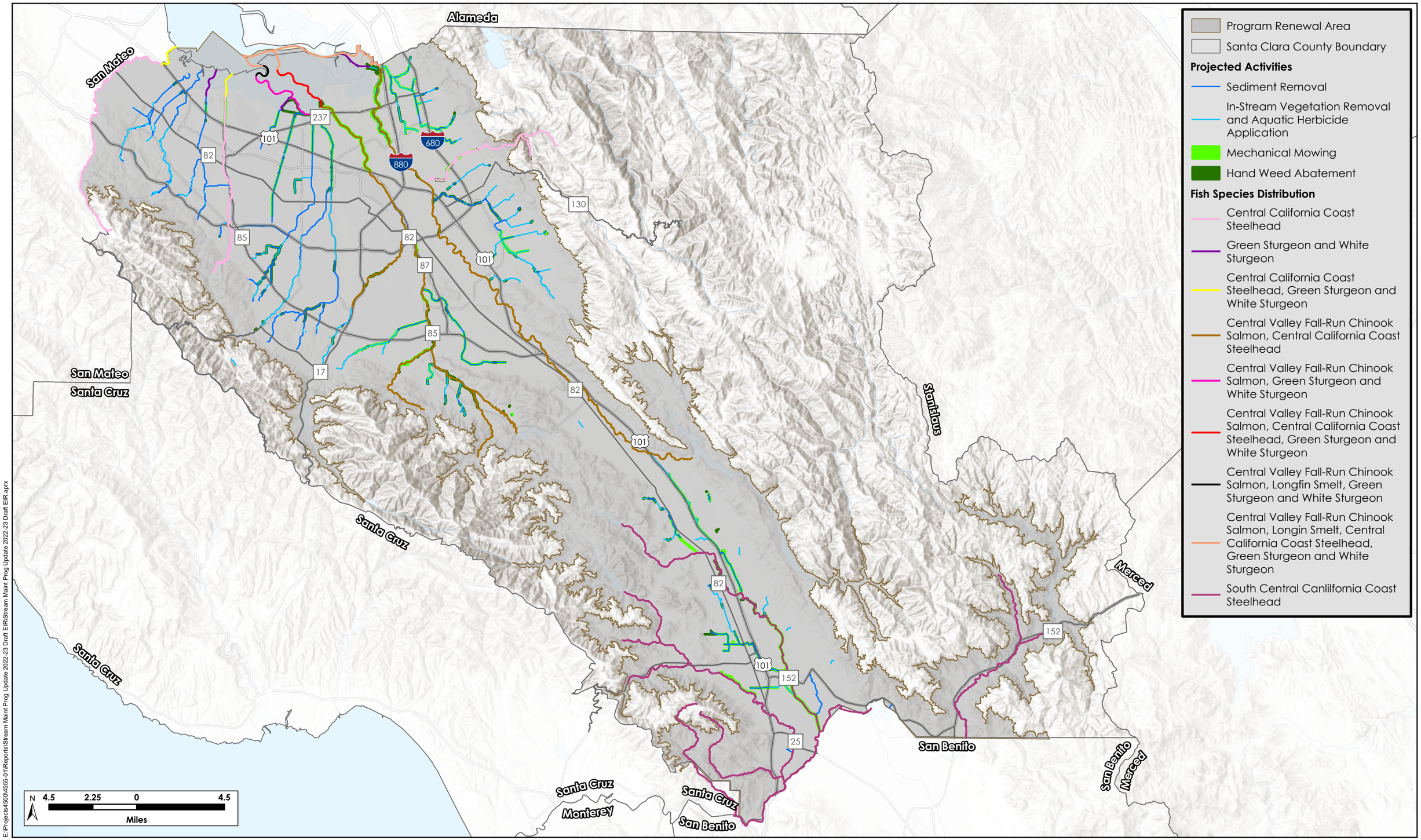

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Figure 3.5-15: Distribution of Threatened and Endangered Fish in the Program Renewal Area
Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

3.5 Cultural and Paleontological Resources

3.5.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) as related to cultural resources and paleontological resources.

Cultural resources are the remains and sites associated with human activities and include pre-contact and ethnographic Native American archaeological sites, historic-era archaeological sites, historic buildings, and elements or areas of the natural landscape which have traditional cultural significance. Pre-contact, ethnographic, and historic-era districts that include multiple features and components are also considered as cultural resources.

Paleontological resources include the fossilized remains of vertebrate and invertebrate organisms, fossilized tracks, and plant fossils. An update of the CEQA Guidelines that was approved in 2018 moved the criteria discussing paleontological resources to the "Geology and Soils" section of the Appendix G checklist. However, the Geology and Soils section has been scoped out of this Subsequent Environmental Impact Report (SEIR) (see Section 3.1, "Environmental Setting and Impact Analysis," in Chapter 3), and therefore paleontological resources are analyzed in this section of the SEIR.

As described in Chapter 1, "Introduction," public comments were received during the scoping period (refer to **Appendix B**) and were considered in preparing this Draft SEIR. Scoping comments applicable to the cultural resources analysis included a letter from the Native American Heritage Commission (NAHC). The NAHC provided a summary of the requirements of the Public Resources Code Sections regarding Assembly Bill 52, including provisions for consideration of tribal cultural resources and consultation with California Native American tribes. The comments also included recommendations for a cultural resources assessment, including conducting appropriate background research and an archaeological inventory survey, if required. The cultural resources analysis presented herein provides an assessment of the potential for cultural resources that could be present within the Program Renewal Area and the associated impacts, which address the NAHC comment letter.

Study Area

The study area for the cultural resources and paleontological resources assessment is a 1-mile radius from Program Renewal Area channels, access roads, and other features under the maintenance authority of the Valley Water. The study area was used to help determine general areas of sensitivity and types of resources in the Program Renewal Area, which is discussed in Section 3.5.3, "Environmental Setting."

Program Renewal Area

The Program Renewal Area includes channels, access roads, and other features maintained by Valley Water that require activities outlined in the Stream Maintenance Program (SMP) Manual (provided in Appendix A) such as sediment removal, vegetation management, bank stabilization, management of animal conflicts, minor maintenance (e.g., fence installation and repair, trash and debris removal), and large woody debris management. If present, many previously identified cultural resources or paleontological resources located within an

activity area would indicate an elevated level of sensitivity, suggesting increased likelihood that Program Renewal activities could cause adverse impacts to significant cultural or paleontological resources.

3.5.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to cultural resources for the Program Renewal. Applicable regional and local plans, policies, regulations, or ordinances related to cultural resources are presented in Appendix C, *General Plan Policies and Ordinances*. The plans and policies in Appendix C provide for the inventory and evaluation of cultural resources in order to minimize adverse impacts as well as restore, enhance, and commemorate resources, as appropriate.

Federal Plans, Policies, Regulations, and Laws

National Historic Preservation Act/Section 106

The National Historic Preservation Act (NHPA) of 1966, as amended, requires federal agencies to consider the preservation of historic and pre-contact indigenous resources. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Record of Historic Places (National Register), and it has established an Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the Act requires federal agencies to take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment on the undertaking before licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the National Register.

Federal review of projects is normally referred to as the Section 106 process. The Section 106 review normally involves a four-step procedure described in detail in the implementing regulations (Title 36, Code of Federal Regulations [CFR], Part 800):

- identify and evaluate historic properties in consultation with the State Historic Preservation Officer (SHPO) and interested parties;
- assess the effects of the undertaking on properties that are eligible for inclusion in the National Register;
- consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the ACHP; and
- proceed with the project according to the conditions of the agreement.

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) requires federal agencies to foster environmental quality and preservation. Section 101(b)(4) declares that one objective of the national environmental policy is to "preserve important historic, cultural, and natural aspects of our national heritage...." For any major federal actions significantly affecting environmental quality, federal agencies must prepare, and make available for public comment, an environmental impact statement.

Advisory Council of Historic Preservation Regulations

The Advisory Council of Historic Preservation (ACHP) Regulations, Protection of Historic Properties (36 CFR 800) establish procedures for compliance with Section 106 of the NHPA. These regulations define the criteria of adverse effect, define the role of the SHPO in the Section 106 review process, set forth documentation requirements, and describe procedures to be followed if significant historic properties are discovered during implementation of an undertaking. Pre-contact indigenous and historic resources deemed significant (i.e., eligible for listing in the National Register, per 36 CFR 60.4) must be considered in project planning and construction. The responsible federal agency must submit any proposed undertaking that may affect National Register-eligible properties to the SHPO for review and comment before the project's approval.

National Park Service Regulations, National Register of Historic Places

The National Park Service Regulations (36 CFR 60) set forth procedures for nominating properties to the National Register and present the criteria to be applied in evaluating the eligibility of historic and pre-contact resources for listing in the National Register.

Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines

Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (Federal Register [FR] 190:44716–44742) offer non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these guidelines are the "Standards for Archaeological Documentation" (p. 44734) and "Professional Qualifications Standards for Archeology" (pp. 44740–44741).

Section 106 of the NHPA prescribes (at 36 CFR Section 800.5) specific criteria for determining whether a project would have an adverse effect on a historic property, if any such properties exist in the area of potential effects, as defined by the agency. An impact is considered adverse when pre-contact or historic archaeological sites, structures, districts, or objects listed in or eligible for listing in the National Register are subjected to the following effects:

- physical destruction of or damage to all or part of the property;
- alteration of a property;
- removal of the property from its historic location;
- change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- neglect of a property that causes its deterioration; and
- transfer, lease, or sale of the property.

Because Valley Water would need to obtain a permit from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) for certain activities, the Program

Renewal constitutes a federal undertaking that would require compliance with Section 106 of the NHPA, and federal significance criteria apply. For federally permitted or funded projects, cultural resource significance is evaluated in terms of eligibility for listing in the National Register. National Register criteria for eligibility are defined as follows:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:
>
> - are associated with events that have made a contribution to the broad pattern of our history;
> - are associated with the lives of people significant in our past;
> - embody the distinct characteristics of a type, period, or method of construction, that represent the work of a master, that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> - have yielded, or are likely to yield, information important in prehistory or history.

State Plans, Policies, Regulations, and Laws

California implements the NHPA through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation (OHP), an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historical Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the state's jurisdictions as well as serving as a consulting party in the federal process described above.

California Register of Historical Resources

The California Register of Historical Resources (California Register) is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (Public Resources Code [Pub. Res. Code] Section 5024.1[a]). The eligibility criteria for inclusion on the California Register are based on National Register criteria (Pub. Res. Code Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California resources formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a pre-contact or historic-era resource must be significant at the local, state, and/or federal level under one or more of the following criteria:

- it is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- it is associated with the lives of persons important in our past;

- it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
- it has yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the California Register, it must also retain enough of its character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. A historic resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

The California Register consists of resources that are listed automatically as well as those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- Resources listed on the National Register and those formally determined to be eligible for the National Register;
- California Historical Landmarks from No. 770 onward; and
- California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Resources Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include the following:

- Historical resources with a significance rating of Category 3 through 5 (i.e., resources identified as eligible for listing in the National Register, the California Register, and/or a register maintained by a local jurisdiction);
- Individual historical resources;
- Historical resources contributing to historic districts; or
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone.

California Environmental Quality Act

The California Environmental Quality Act (CEQA), as codified at Pub. Res. Code Sections 21000 et seq., requires lead agencies to determine if a project would have a significant effect on archaeological resources and historic structures.

A substantial adverse change in the significance of an "historical resource" may be a significant effect under CEQA. CEQA Guidelines Section15064(b). The CEQA Guidelines define an "historical resource" as: (1) a resource in the California Register; (2) a resource included in a local register of historical resources, as defined in Pub. Res. Code Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of Pub. Res. Code Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the

architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. "Historical resources" include both archaeological resources and historic structures. A "substantial adverse change" in the significance of a historical resource means an effect on the resource or its immediate surroundings such that its significance is materially impaired.

CEQA Guidelines Section 15126.4(b)(3) provides rules for mitigating impacts on historical resources of an archeological nature. Agencies are encouraged to avoid damaging effects whenever feasible, with preservation in place as the preferred mitigation technique. When preservation is not feasible and data recovery through excavation is the only feasible mitigation technique, in most circumstances a data recovery plan must be adopted before excavation and filed with the California Historical Resources Regional Information Center.

In addition, regarding archaeological sites, as defined in Pub. Res. Code Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; and
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Pub. Res. Code Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site is to be treated in accordance with the provisions of Pub. Res. Code Section 21083 regarding unique archaeological resources. The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of a project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064[c][4]).

California Public Resources Code and Health and Safety Code

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including Pub. Res. Code Section 5097.98 and Health and Safety Code Section 7050.5. Pub. Res. Code Section 5097.98 provides procedures in the event human remains of Native American origin are discovered during project implementation, including no further disturbances in the immediate vicinity of the discovery and that the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD).

Health and Safety Code Section 7050.5 protects human remains by prohibiting the disinterring, disturbing, or removing of human remains from any location other than a dedicated cemetery.

3.5.3 Environmental Setting

This environmental setting discussion is divided into three sections: the first section summarizes the natural and cultural history of the Santa Clara Valley region; the second section discusses previous cultural resources surveys and assessments in the Program Renewal Area; and the third section describes the types of cultural resources that could be encountered in the Program Renewal Area.

Natural and Cultural History

Natural Environment

The Program Renewal Area contains an abundance of natural resources that would have been taken advantage of by its indigenous and early historic-era populations. The South Bay area hosts a wide variety of natural communities including salt marsh, scrub brush, grassland, and foothill woodlands. Deer, elk, and waterfowl were plentiful prior to European expansion, as were marine and bay resources such as seals, otters, abalone, mussels, oysters, clams, and numerous fish species. Chinook salmon were seasonally present and historically Coho salmon were also common in San Francisco Bay. Franciscan chert was an easily obtainable local raw material for stone tools. Obsidian for tools could be obtained from quarries to the north (Moratto 1984).

The San Francisco Bay Area, including the Santa Clara Valley, has undergone dramatic landscape changes since humans began to inhabit the region more than 13,000 years ago. Sea levels began rising around 15,000 years ago, at which time the coastline was located west of the Farallon Islands and reached the present level of the bay about 5,000 years ago (Helley and Graymer 1997).

This dramatic change in stream base level resulted in increased deposition of sediment along the lower reaches of Bay Area streams; this was particularly exacerbated during the Gold Rush in the north bay. In many places, the interface between older land surfaces and newer stream deposits (those less than 5,000 years old) is marked by a well-developed buried soil profile, or a paleosol. Paleosols preserve the composition and character of the earth's surface before subsequent sediment deposition; thus, paleosols have the potential to preserve cultural materials and features if the area was occupied or settled by humans.

Because human populations have grown since the arrival of the area's first inhabitants, younger paleosols (late Holocene) are more likely to yield cultural materials and features than older paleosols (early Holocene or late Pleistocene). Numerous deeply buried archaeological sites have been uncovered in the Santa Clara Valley, at depths varying between 1 foot and more than 10 feet below ground surface (bgs). In fact, more than 60 percent of recorded archaeological sites in this region have been found in a buried context (Meyer and Rosenthal 2007).

Pre-contact Background

Categorizing the pre-contact period into cultural stages allows researchers to describe a broad range of cultural resources with similar patterns and components during a given time frame, thereby creating a regional chronology. Milliken et al. (2007) provided a framework for interpreting the San Francisco Bay Area in four periods: the Paleoindian Period, the Early

Period, the Middle Period, and the Late Period. Economic patterns, stylistic aspects, and regional phases further subdivide these periods into shorter phases. This framework uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

The Paleoindian Period (11500–8000 B.C.) was characterized by big-game hunters occupying broad geographic areas. Evidence of human habitation during the Paleoindian Period has not yet been discovered in the San Francisco Bay Area.

During the Early Period (Lower Archaic; 8000–3500 B.C.), geographic mobility continued from the Paleoindian Period and is characterized by the milling slab and handstone, and by large wide-stemmed and leaf-shaped projectile points. The first cut shell beads and the mortar and pestle are documented in burials during the Early Period (Middle Archaic; 3500–500 B.C.), indicating the beginning of a shift away from mobility to a practice of remaining in one location over time. Early Period human populations are known from several Bay Area sites, such as those at the Los Vaqueros Reservoir (CA-CCO-696) and in the Santa Clara Valley in Santa Teresa (CA-SCL-178).

Middle Period sites are more widespread in the San Francisco Bay Area and are evidenced by substantial settlements, isolated burials, distinct cemeteries, milling slabs, mortars and pestles, and the fabrication and use of shell beads and other ornaments. During the Middle Period—which consists of the Lower Middle Period (Initial Upper Archaic; 500 B.C.–A.D. 430) and Upper Middle Period (Late Upper Archaic; A.D. 430–1050)—geographic mobility may have continued, although groups began to establish longer term base camps in localities from which a more diverse range of resources could be exploited. The first rich black middens are recorded from this period. A more diverse economic base is suggested by the addition of new milling tools, obsidian and chert concave-base projectile points, and the occurrence of sites in a wider range of environments. By the Upper Middle Period, mobility was being replaced by the development of numerous small villages. Around 1370 B.C. a cultural disruption occurred, evidenced by the sudden collapse of a trade network in beads.

The Late Period has left the most comprehensive archaeological record of indigenous populations in San Francisco Bay Area. During the Initial Late Period (Lower Emergent; A.D. 1050–1650), social complexity developed toward lifeways of large, central villages with resident political leaders and specialized activity sites, which are locations where archaeological sites may be discovered. Artifacts associated with the period include the bow and arrow, small corner-notched projectile points, and a diversity of beads and ornaments.

Ethnohistoric Background

Based on a compilation of ethnographic, historic, and archaeological data, Milliken (1995) describes a group known as the Ohlone, who once occupied the general vicinity of the Program Renewal Area. Although traditional anthropological literature portrayed the Ohlone peoples as having a static culture, today it is better understood that many variations of culture and ideology existed within and between villages. While these static descriptions of separations between native cultures of California make it easier for ethnographers to describe past behaviors, this masks Native adaptability and self-identity. California's Native Americans never saw themselves as members of larger cultural groups, as described by some anthropologists. Instead, they saw themselves as members of specific villages, perhaps

related to others by marriage or kinship ties, but viewing the village as the primary identifier of their origins.

Levy (1978) describes the language group spoken by the Ohlone, known as "Costanoan." This term is originally derived from a Spanish word designating the coastal peoples of Central California. Today "Costanoan" is used as a linguistic term that refers to a larger language family spoken by distinct sociopolitical groups that spoke at least eight languages (as different as Spanish is from French) of the same Penutian (also called *Yok-Utian*) language group. The Ohlone once occupied a large territory from San Francisco Bay in the north to the Big Sur and the Salinas Rivers in the south.

Economically, Ohlone engaged in hunting and gathering. Their territory encompassed both coastal and open valley environments, which contained a wide variety of resources, including grass seeds, acorns, bulbs and tubers, bear, deer, elk, antelope, a variety of bird species, rabbit, and other small mammals. The Ohlone acknowledged private ownership of goods and songs, and village ownership of rights to land and/or natural resources; they aggressively protected their village territories, requiring monetary payment for access rights in the form of clamshell beads.

By the mid-1800s, Spanish missionization, diseases, raids by Mexican slave traders, and dense immigrant settlement had disrupted Ohlone culture, dramatically reducing the population, and displacing the native people from their villages and land-based resources. Reduction of Ohlone villages, conversion to Catholicism, and exposure to Spanish language, culture and material practices commenced with the establishment of Mission Santa Clara in early 1777 and the settlement of San Jose in the same year (Milliken 1995). The majority of Ohlone who joined Mission Santa Clara during the mid-1790s resided at seven main villages in the Santa Clara Valley, four of which probably contained more than 100 inhabitants (Milliken 2007). Milliken estimates by 1800, most native residents of the Santa Clara Valley had experienced severe psychological depression from the spread of epidemic diseases and witnessed environmental deterioration resulting from introduced grazing and farming practices. Spanish missions further eroded native cultural, social, and economic institutions, resulting in the elimination of perhaps 80 percent of native residents in the Bay Area.

Although the Ohlone lost their original land base because of Spanish missionizing efforts, rancho allotments, and legal obstacles preventing favorable rulings in U.S. courts, modern-day Ohlone representatives still have a strong presence in the San Francisco Bay Area and are highly interested in their historic and pre-contact past. Section 3.13, "Tribal Cultural Resources," provides details on the tribal outreach completed by Valley Water for the Program Renewal and other Valley Water programs.

Historic-Era Background

The first mention of the Ohlone in historical records comes from the 1542 account of Juan Rodriquez Cabrillo, who sailed into Monterey Bay and observed some of California's native residents. Over 200 years later, an expeditionary force under the direction of Captain Gaspar de Portola traversed Ohlone lands on their way to the East Bay. After 1770, when the presidio of Monterey and Mission San Carlos Boromeo were founded, additional expeditions reached the South San Francisco Bay Area. For example, a 1776 expedition headed by Juan Bautista de Anza reached the Guadalupe River and possibly crossed near Tamien Station in search of suitable locations for additional Spanish settlements (Hylkema 2007). At this time, Anza

observed "the plains surrounding the Guadalupe River maintained large numbers of villages with a thriving Native American population" (Hylkema 2007:35). For this reason, Mission Santa Clara was established in 1777 and named *Santa Clara de Thamien*. The pueblo of *San Jose de Guadalupe* (San Jose Pueblo) was established later that year on the east side of the Guadalupe River. Flooding of the Guadalupe River in 1779 resulted in the relocation of the mission and it was renamed *Misión Santa Clara de Asís*. After 1803, the area around Mission Santa Clara was designated as a rancho and used as pasture for livestock (Hylkema 2007:38).

With the establishment of the independent government of Mexico in 1821, Spanish missions were eventually secularized, and former mission lands typically were allotted to wealthy Mexican citizens. Fifty grants of land were made in what is now Santa Clara County (Kyle 1990:404–411). These land grants included the following:

- *Rancho San Ysidro* (Old Gilroy)
- *Rancho Los Tularcitos* (Milpitas)
- *Rancho Milpitas* (Milpitas)
- *Rancho Ulistac* (Agnew)
- *Rancho Patoría de las Borregas* (Mountain View and Sunnyvale)
- *Rancho Rincón de San Francisquito* (Palo Alto)
- *Rancho Rinconada del Arroyo de San Francisquito* (Palo Alto)
- *Rancho San Francisquito* (Stanford University)
- *Rancho San Antonio* (Los Altos)
- *Rancho Purísima Concepción* (Los Altos Hills)
- *Rancho Quito* (Saratoga)
- *Rancho Rinconada de los Gatos* (Los Gatos)
- *Rancho Santa Teresa* (San Jose)
- *Rancho El Potrero de Santa Clara* (San Jose)
- *Rancho Los Coches* (San Jose)
- *Rancho Las Animas* (Southern Santa Clara County)
- *Rancho Ojo de Agua de la Coche* (Morgan Hill)
- *Rancho Cañada de Pala* (eastern Santa Clara County)

The Peralta Adobe, constructed in 1777 and the oldest building in San Jose, was located in *Rancho San Antonio*. One rancho—*Rancho Polsomi*—contains several pre-contact indigenous shell mounds and was granted to an Ohlone Indian, Lope Ínigo, who chose to be buried in one mound after his death in 1864.

Under Mexican law, settlement by non-Mexican citizens was permissible and soon immigrants from the U.S. settled in the Bay Area, although they often illegally squatted on rancho lands. Following the end of the Mexican American War in 1848, California was admitted to the Union (1850), becoming the 31st state. For Mexican landowners, most of their property was subsequently lost to American settlers. Several present-day towns in Santa

Clara County emerged from disbursed Mexican lands: Gilroy, Los Gatos, Milpitas, San Jose, and Santa Clara (Gudde 1969).

As the American Period began, an influx of new economies resulted in an increase in settlement and the development of farming, ranching, industry, and businesses in Santa Clara County. Santa Clara Valley's agricultural productivity was accelerated by immigrants—especially of Italian origin—who arrived en masse to Santa Clara County around 1870 and became involved in one of the most productive fruit growing and distribution regions in the U.S. (Hylkema 2007:42). Improved agricultural productivity was also spurred on by technological innovations for irrigating crops and orchards. By 1919, at least ten fruit and vegetable canning plants were operating in Santa Clara County; the region's fruit packing industry peaked in the 1930s with 30 packing plants operating in the county. During World War II, the Bay Area experienced rapid growth, primarily due to shipbuilding and related industries in the San Francisco Bay. After the booming agricultural economy of the 1930s and the influx of population during World War II, Santa Clara County focused on technology with the founding of Hewlett Packard and Fairchild Semiconductor in the late 1950s. The area is now synonymous with the term "Silicon Valley," and is the location of several of the world's leading computer, microprocessor, and internet companies.

In the 1920s, persistent flooding, growing communities, and agricultural productivity in Santa Clara County led farmers and community leaders to petition for the creation of a water conservation committee for controlling and managing the valley's water resources. At that time, the Santa Clara Valley Water Conservation Committee was formed, and it subsequently spearheaded the establishment of the Santa Clara Valley Water Conservation District in 1929. Since that time, reservoirs have been constructed to alleviate problems associated with periodic droughts and to slow rapidly dropping groundwater levels. In 1952, the County Board of Supervisors formed the Santa Clara County Flood Control and Water Conservation District. In the 1970s, the Santa Clara County Flood Control District changed its name to the Santa Clara Valley Water District, with responsibilities for providing water supply and flood protection.

Previous Cultural Resource Surveys

As part of the mitigation requirements for SMP-1, pre-construction surveys and assessments of areas surrounding proposed maintenance activity areas were conducted from 2002–2011 by California Department of Parks and Recreation (State Parks) Archaeologist Mark Hylkema. Evaluations were based on the results of record and archival searches conducted at the Northwest Information Center of the California Historical Resources Information System (CHRIS) at Sonoma State University and augmented by data retained by State Parks. Cultural resource monitoring by a qualified archaeologist was recommended in areas where the removal of sediment within existing stream profiles was proposed and/or areas near known cultural resources that were deemed potentially sensitive.

A monitoring program was implemented for SMP-1 by Albion Environmental, Inc. (2002, 2003) and by Pacific Legacy, Inc. (2004, 2005, 2006, 2007, 2008, 2009, 2010), for those locations deemed potentially sensitive. Cultural resource monitors were required for ground-disturbing activities such as vegetation removal, silt or sediment removal, the removal of previously installed stream maintenance features (such as concrete riprap or tailings), the installation of bank protection features (such as rock weirs or retaining walls), and stream channel widening or rerouting. Historic or temporally indeterminate debris was noted at

many of the locations that were monitored; however, most of these items were observed in transposed secondary contexts and few yielded in situ cultural materials. Exceptions included a historic debris scatter discovered along Permanente Creek, an isolated boulder mortar found along Alamitos Creek at Bubblingwell Place, and in situ human remains recovered from Adobe Creek. All in situ discoveries were recorded and documented. Only one inadvertent discovery was recorded under SMP-1: a historic-era barge found in the Alviso Slough in 2010. The resource was documented according to the standards of the Historic American Engineering Record and monitored during ground-disturbing activities.

For SMP-2, Pacific Legacy, Inc. completed cultural resources identification efforts and monitoring programs during 2017–2021 (Pacific Legacy 2018a, 2018b, 2019, 2021a, 2021b, 2021c, 2021d). Ground-disturbing activities for which studies were required were similar to those identified in SMP-1. In addition, Valley Water requested several non-confidential records searches from the CHRIS to determine if additional cultural resources analysis was warranted at specific project locations. No significant cultural materials or sites were identified during the programs. Pacific Legacy, Inc. also developed a training module, *Cultural Resources Awareness Training for the Santa Clara Valley Water District, Stream Maintenance Program Unit*, which outlined protocols to follow in the event that buried pre-contact and/or historic-era cultural remains are encountered (Pacific Legacy 2018c).

Background Research for the Program Renewal

For the Program Renewal, a records search was completed at the CHRIS on January 16, 2025 (File No. 24-1016). The results of the records search indicate that there approximately 160 previously documented cultural resources in the immediate vicinity of the Program Renewal Area. The records search included reviews of the base maps for the Program Renewal Area as well as a 20-foot radius, and a included a review of the National Register, the California Register, and the Built Environment Resource Directory for Santa Clara County.

Pre-contact Indigenous Property Types

Based on the location and constituents of other pre-contact sites in the Santa Clara Valley in similar environmental settings, the Program Renewal Area has a high sensitivity for containing important pre-contact indigenous property types. Seven pre-contact property types that might be encountered within the Program Renewal Area are discussed below: midden and artifact and/or ecofact scatters; residential sites; non-residential sites; shellmounds; districts and landscapes; cemeteries, or indigenous burial sites; and isolated artifacts and re-deposited materials. The results of the CHRIS records search indicate there are 85 pre-contact sites in the vicinity of the Program Renewal Area, as well as an additional 16 resources that include pre-contact and historic-era components. The types of pre-contact sites are further described below.

Midden and Artifact and/or Ecofact Scatters

The majority of pre-contact sites in the Santa Clara Valley are shell middens located near coastal or estuarine habitats, and along major waterways such as the Guadalupe River and Coyote Creek. Middens are accumulations of organic material left behind by human activities, such as marine shell, food bone, charcoal from cooking fires, ash, and other food waste that darkens the soil. Middens commonly include some combination of flaked stone artifacts and debitage left over from their manufacture, such as: flakes and shatter; ground stone implements and fragments; burnt and unburnt faunal bone; ash; charcoal; and fire-affected

rocks. Middens in Santa Clara Valley and the surrounding Bay Area are typically characterized by relatively high concentrations of marine shell and shell fragments. Shell middens resulted from long-term or frequent occupation by people carrying out daily activities such as food preparation, eating, and toolmaking, as well as the gathering and processing of massive quantities of shellfish. Extended occupation by large groups of people, as well as periods of intentional construction, led to the accumulation of mounded shell middens, called shellmounds. Even among shellmounds, there were varying sizes and, perhaps, varying functions.

An alternative way of describing midden and artifact and/or ecofact scatter property types in the area is to divide them into two broad categories of resources: residential and non-residential sites (William Self Associates and Dean 2009; Ziesing 2000). These categories are general enough that they encompass material evidence from the entire pre-contact period and allow for the study of cultural change through time. Indigenous people subsisted by hunting and gathering; harvesting the fauna and flora available in the wooded hills and coastal and estuarine habitats of the greater San Francisco Bay Area. They hunted deer, trapped smaller animals and birds, caught fish and sea mammals, and ate shellfish. They also ate acorns, berries, and other plant foods that were available at different times throughout the year. In general, Native Americans in the region moved with the seasons, but also returned to favorite locations and group gathering places. As a result, the archaeological record in the Santa Clara Valley includes a variety of site types that housed different numbers of people for varying lengths of time (e.g., individual hunting groups, small tribal groups, or larger gatherings of tribes).

Shellmounds are included in the discussion below as a separate category from residential and non-residential sites because they are a site type characteristic of the greater San Francisco Bay Area, and because there is ongoing debate about whether shellmounds are residential or non-residential sites (Lightfoot 1997; Lightfoot and Luby 2002).

Residential Sites

Residential sites contain evidence of permanent or semi-permanent occupation. In addition to midden, a residential site typically contains fire pits or hearths with ash, charcoal, and/or fire-affected rocks; circular or oval depressions of house floors; and, often, human burials. Large sites with very thick middens and multiple features such as hearths, house floors, and burials have traditionally been interpreted as villages.

Villages are characterized by large concentrations of a wide variety of artifacts and features, along with human burials. These sites represent long-term and/or frequent occupations by large groups of people. The deposits result from a full range of activities relating to daily life. These sites are identified by concentrations of shell and shell fragments from a variety of shellfish species, and combinations of materials such as charcoal, ash, faunal bone, fire-affected rock, shell ornaments, bone tools, groundstone implements, flaked stone tools (e.g., spear, knife, and arrow points and the debitage from their manufacture), human remains, quartz crystals, mica, ochre, and filled pits or impressions. The upper portions of San Francisco Bay Area shell middens are typically no longer present and layers beneath the present ground surface may have been damaged or destroyed by urban development. However, in many cases the deepest layers (at least 5 feet bgs) may remain intact.

Occupation sites are another category of residential sites. These are smaller than village sites, and likely housed smaller groups of people for shorter periods of time. The primary distinctions between village sites and occupation sites are the size of the settlement, as well as length of occupation. Residential occupation sites exhibit similar concentrations of artifacts and materials gathered and/or produced by humans while conducting a range of cultural practices that were typically carried out at short-term campsites, but they become occupation sites when the sites were occupied long enough to leave behind features visible as part of the archaeological record. Features that may be found at short-term occupation sites include hearths (concentrations of fire-affected rock, charcoal, ash, and perhaps, faunal bone or flaked stone debitage); house pits or house floor impressions (hardened earth, sometimes lined with fired clay); and burials (cremations with concentrations of burned human remains, ash, charcoal; or flexed interments with human remains and associated artifacts).

Non-residential Sites

Non-residential sites, also referred to as special purpose sites, include diverse site types, but their common characteristic is they lack indications of long-term occupation. They represent activities that were carried out away from a residential base, such as temporary hunting or shellfish gathering camps, or isolated burials. These sites typically contain concentrations of limited artifact types and materials gathered or produced by indigenous peoples in pursuit of a limited range of activities or a single activity, such as deer hunting, shellfish gathering, butchering, or flaked stone tool or shell bead manufacture.

Shellmounds

Shellmounds are common sites found along the San Francisco Bay shoreline and have been interpreted not only as residential, ritual, and burial sites, but also as symbolic landscapes. Coastal and bay shoreline shellmounds would have been highly visible in pre-contact times, and their relative size and locations could have had symbolic, social, political, and historical significance.

The role of shellmounds in the subsistence-settlement system most likely changed over time, as evidenced by the variation in location, characteristics, and interrelationships of the shellmounds. The shellmounds have been proposed as residential bases, refuse accumulations, garbage dumps, or specialized ceremonial sites. Because many of the mounds contain abundant and intermixed evidence of food remains, hearths, house floors, and burials, it is difficult to devise a simple and comprehensive explanation for their function. Lightfoot and Luby (2002) argue for the ceremonial significance of the mounds, partly because the mounds they examined once rose above the landscape—some as high as three-story buildings—providing impressive visual markers that they argue likely had symbolic value. The Tamien Nation notes that shellmounds are significant religious spaces and places of ceremonial gestures to give offerings to deities and feeding ancestors (Tamien 2022).

Due to the intensive industrialization and urban development of the greater San Francisco Bay Area, most of the 425 mounds that Nelson (1909) documented in the early twentieth century have been either completely destroyed or severely compromised and most are no longer visible on the landscape. Archaeological methods have become more sophisticated, and the understanding of the construction and chronology of shellmounds, as well as the cultural history of the surrounding countryside, has grown considerably since the mass

excavations and destruction of shellmounds in the first half of the twentieth century. Today, most analysis and interpretation of shellmound function relies upon existing data recovered with outdated techniques and incomplete understanding of the complexities of chronology and structure. Recent construction projects have rediscovered intact portions of some shellmounds once thought to be completely destroyed.

Districts and Landscapes

Districts include a concentration, linkage, or continuity of pre-contact sites that derive importance from being unified spatially and/or typologically. Districts comprise both features that lack individual eligibility, are individually eligible, or a combination of both. Districts can contain multiple property types. A district must be within a definable geographic area. In addition, landscapes, such as the specific location where significant traditional events, activities, or cultural observances have taken place, may be considered culturally significant. Two archaeological districts in Santa Clara County, the Coyote Creek Archaeological District and the Circle of Circles Archaeological District, are listed in the California Register of Historical Resources. There are also documented landscapes, including the Juristac Tribal Cultural Landscape, which has been recommended eligible for listing in the California Register of Historical Resources as a Tribal Cultural Landscape.

Cemeteries and Isolated Human Remains

Cemeteries, or indigenous burial sites, including interments and cremations, are most often found in association with residential sites, but occasionally concentrations of burials were placed in a cemetery with no evidence of occupation. Isolated human remains, are occasionally found in the Santa Clara Valley with no apparent associations. All burial sites, whether a cemetery or isolated burial, is considered an important and protected resource.

Isolated Artifacts and Re-deposited Materials

Isolated artifacts have occasionally been found in the Santa Clara Valley with no apparent associations. Such finds may represent objects lost during their use, or more likely, re-deposited materials (secondary deposits) that may result from various processes in antiquity (such as erosion out of a deposit by wave action or creek flow) or historic or modern ground disturbance (such as construction work). Re-deposited cultural materials and isolated artifacts have been removed from their original context and may have limited information potential. In certain cases, isolated remains may have great potential informational value due to the rarity of such items, as in the case of re-deposited Middle Holocene artifacts.

Historic-era Property Types

Historic-era property types that could be found in the Program Renewal Area include remnants of historic-era landscape features and refuse features. Other historic-era property types include architectural features such as foundations or walls, and infrastructure features such as utilities. However, these property types are most effectively addressed through archival research and would not likely be evaluated as significant. Submerged maritime resources may also be present in the Program Renewal Area, such as the barge identified in Alviso Slough in 2010 (Pacific Legacy 2010). The results of the CHRIS records search indicate there are 58 historic-era resources in the immediate vicinity of the Program Renewal Area, including two historic districts, the Valley Water dams district and Grant Historic Landscape,

as well as a quarry, ponds, mining sites, artifact concentrations, and structures such as bridges, trestles, and culverts. A more detailed description of the types of historic-era property types is discussed below.

Landscape Features

Landscape features in the archaeological record are often ephemeral resources, such as fence lines and ditches, which may give evidence of historic-era land uses. More substantial landscape features may include elements such as stone walls and irrigation canals. While historic maps are critical for understanding landscape evolution, the research potential for landscape features varies, and often depends on what is understood about historic-era land use from the documentary record. Significant alterations to watercourses within Santa Clara Valley during the historic period could be considered to have archaeological components such as artifacts, features, and structural foundations and represents the growing Bay Area population who settled by and increasingly drew from available freshwater sources.

Refuse Features

Refuse features that result from domestic and commercial use of an area have proven to be one of the most useful sources for historic-era archaeological investigations in urban settings. Two primary types of refuse features are recognized in archaeological practice: hollow-filled refuse features and sheet refuse features. Hollow-filled refuse features include refuse pits, privies, wells, and other similar features. These property types were created for specifically functional use and during their use-life or upon abandonment they became receptacles for refuse. Discrete refuse features provide archaeologists with a glimpse of the day-to-day practices of the occupants who used them. As such, these features frequently have the ability to address important research themes. Subsurface, hollow-filled refuse features are commonly associated with late-nineteenth century or early-twentieth century dwellings that were present before later structures were built, and they are often the target of archaeological testing programs.

Sheet refuse features include broad artifact scatters, as well as more ephemeral surface scatters that are sometimes indicative of more extensive archaeological deposits located beneath the surface. Sheet refuse often accumulates on living surfaces over a period of time, or sheet refuse may also be introduced as fill to raise low ground. The long accumulation time involved in creating such property types can be problematic for archaeologists – it may be difficult to make substantive interpretive statements from a sheet refuse layer deposited over many years by numerous occupants. Some sheet refuse deposits may have information potential, but only if they can be securely dated and if the remains are abundant and varied (Van Bueren et al. 2003). Larger refuse deposits may also be important if they can be associated with a particular residential or ethnic group (Voss 2008).

Architectural Features

Architectural features that may be considered archaeological resources include subsurface structural remains such as foundations, wall footings, and floor remnants. This property type encompasses a wide variety of buildings and other structures. In many cases, architectural remains correlate with buildings and structures depicted on maps, photographs, and other documents, especially in an area as well-documented as the Program Renewal Area. When that is the case, the ability of those remains to contribute information to important research

themes may be limited, especially for later nineteenth and twentieth century features. Many research questions that could be addressed by architectural features are often better suited to other research media, such as analysis of primary documents, rather than archaeological study. However, archaeological investigation can sometimes add previously undocumented details to the historical record.

Infrastructure Features

Infrastructure includes those features related to development and maintenance of the region, such as roads, cisterns, sewer lines, drainpipes, power lines, water lines, and hydrants. Infrastructure features often correlate to utility maps and the locations of architectural features such as buildings. Numerous infrastructure features, including rail tracks and water lines, are identified on historic Sanborn maps and are likely still present throughout the Program Renewal Area. Documentation of infrastructure features is often available in the historical record; however, it is possible that features may be considered significant if they add previously undocumented details to the historical record.

Maritime and Land Reclamation Features

Potential maritime features within the Program Renewal Area include undocumented shoreline maritime infrastructure, such as piers or wharves, boats, barges, or features associated with land reclamation. Features associated with the process of land reclamation could also be considered maritime features and may be encountered during ground disturbing activities. Such features could include landfill retaining structures, bulkhead, or piles. The significance of an individual features would depend on the type of resource represented, as well as its integrity.

Districts

Districts include a concentration, linkage, or continuity of historic-era resources that derive importance from being unified spatially and/or typologically. Districts may be comprised of both features that lack individual eligibility and/or are individually eligible. Districts can contain multiple property types including buildings, structures, objects, sites, and landscape features. A district must be within a definable geographic area based upon a shared relationship among the features that comprise the district.

Paleontological Resources

The Santa Clara Valley contains a diverse record of geologic and biologic history spanning more than 150 million years and dates from the Jurassic Period to the present. The processes of multiple tectonic influences (faulting, uplift, sedimentary deposition, sea level fluctuations) have combined to create a significant record of both marine and terrestrial fossils in the Program Renewal Area.

Much of the paleontological interest in the region is caused by discoveries of fossilized Pleistocene vertebrates from Quaternary deposits in the South San Francisco Bay Area. Descriptions of these fossil vertebrates have provided scientists with one of the most complete records of Pleistocene fauna in California (Santa Clara County Parks and Recreation Department 2006).

Sediments of Holocene age that form thin surficial cover are considered to be of little paleontological interest and are, therefore, considered to possess low sensitivity for fossil specimens (Santa Clara County Parks and Recreation Department 2006).

Specific to the Program Renewal Area, in 2005, a fossil of a young Columbian mammoth (*Mammuthus columbi*) was found on a floodplain/overflow area east of the Guadalupe River downstream of Trimble Road in San Jose, just north of Mineta San Jose International Airport. The fossil dates from the late Pleistocene epoch and included portions of skull, tusks, molar teeth, femur, toes, ribs, and other bone fragments (University of California Museum of Paleontology 2005).

3.5.4 Impact Analysis

Methodology

CEQA requires assessment of a project's potential effects on historical resources, as defined in Section 15064.5 of the CEQA Guidelines (see below). In general, historical resources are those listed or eligible for inclusion on the California Register or in a local register or identified based on a survey that meets the requirements of Pub. Res. Code Sections 5020.1 (k) and 5024.1(g). The identification of historical resources involves several steps, including identifying cultural resources within a project's boundaries; evaluating the resources to determine if they qualify as historical resources; and determining whether the project has a substantial direct or indirect effect on historical resources. Resources found not to be "historical resources" or otherwise "historically significant" need no further management, unless they are "unique archaeological resources". In general, effects on significant CEQA resources can be reduced to less-than-significant levels by applying the proper treatment or management measures, such as avoidance, and if avoidance is not feasible, further documentation, or data recovery.

As discussed above in Section 3.5.3, "Environmental Setting," the potential for the occurrence of pre-contact and historic-era cultural resources generally is high along existing waterways. Furthermore, because of alluvial flooding along waterways, the potential for buried cultural deposits is high. Several components of the Program Renewal would require ground disturbing activities that could disturb previously documented or unknown and potentially important pre-contact and historic-era cultural resources. The Program Renewal would not include any activities that could affect buildings, so an evaluation of buildings was not undertaken as part of this analysis.

An analysis of the types of activities to be undertaken and their potential impacts on cultural resources is provided below. These or similar activities have been occurring in Valley Water-maintained canals and channels for many years. Both the SMP-1 and SMP-2 EIRs provided a programmatic approach to reducing impacts to cultural resources to a less-than-significant level. Treatment measures included in Program Renewal BMPs include the same pre-construction surveys, avoidance, monitoring, and protocols for inadvertent discoveries, including evaluation of finds and potentially data recovery. The impact analysis baseline is based on the existing conditions at the time of the May 2022 Notice of Preparation and evaluates impacts from the maintenance activities implemented for the existing Program (SMP-2) and the new activities proposed for the Program Renewal.

Potential Impacts of Program Renewal Activities

Routine activities undertaken as part of the Program Renewal include sediment removal, vegetation management, bank stabilization, management of animal conflicts, minor maintenance (e.g., fence installation and repair, trash and debris removal), and large woody debris management. Minor maintenance activities added to the Program Renewal includes trash boom maintenance, work at maintenance yards, trash clean-up activities near bridges, and repairs to upper and lower maintenance roads in addition to grading maintenance yards, and maintenance at off-channel detention basins. These routine activities include varying degrees of ground-disturbing activities that may impact cultural resources. Ground-disturbing and construction activities could impact previously documented or unknown potentially important cultural resources.

Certain activities proposed by Valley Water do not have the potential to disturb native soils and therefore do not have the potential to impact cultural resources. Program activities have therefore been divided into two categories: (1) activities that will disturb native soils by excavation, construction, or sediment disposal; and (2) activities that will not disturb native soils.

Activities that will disturb native soils include maintenance activities required for sediment removal, vegetation management, bank stabilization, and minor maintenance that requires the disturbance of native soils by excavation and/or construction. This includes culvert replacement, stream channel access or clearing, sediment removal, hazardous tree removal, and the reuse of sediments for habitat restoration. Where cultural resources are present in native soils, disturbance of these native soils has the potential to impact such resources.

Activities that will not disturb native soils consists of activities such as those that are accomplished from the top of bank, including minor vegetation and debris removal from modified and natural channels; those conducted in imported fill material; those involving the use of handheld equipment; or those involving other non-ground-disturbing activities (e.g., management of animal conflicts). These activities do not have the potential to disturb native soils and therefore would not impact cultural resources. These activities do not require any additional assessment.

Criteria for Determining Significance

For the purposes of this analysis and consistent with CEQA Guidelines Appendix G, the Program Renewal would result in a significant impact on cultural and paleontological resources if it would:

A. Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in Section 15064.5; or

B. Disturb any human remains, including those interred outside of formal cemeteries; or

C. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Environmental Impacts

Impact CR-1: Adverse Effect on Known and Previously Undiscovered Archaeological or Historical Resources (Less than Significant)

Ground-disturbing maintenance activities conducted under the Program Renewal would have the potential to disturb and have substantial adverse effects on known or previously undiscovered cultural resources within the Program Renewal Area, including CEQA-defined "historical resources" and "unique archaeological resources."

Sediment Removal and Bank Stabilization

Sediment removal and bank stabilization activities would involve ground disturbance of creek channels and banks in the Program Renewal Area, through implementation of the activities themselves and the potential construction of temporary access routes. Ground disturbances associated with these activities could adversely impact known or previously undiscovered archaeological or historical resources, including pre-contact indigenous resources such as midden; artifact deposits; residential sites; use areas; shellmounds; burials; and isolated artifacts as well as historic-era resources such as landscape features, refuse features, and other architectural remnants including maritime features. These types of resources would most likely be identified along natural stream channel alignments, although artificially constructed channels could also extend through areas of sensitivity. Sediment removal or bank stabilization activities could result in alteration of elements of these resources that made them eligible for the California Register or could result in a substantial change in the significance of a historical resource. Most of these activities would be conducted in modified or engineered channels; therefore, any undiscovered resources may have already been altered or destroyed during channel construction or historic maintenance activities. Nevertheless, stream channels are areas that are considered highly sensitive for the presence of cultural resources, and although most work would not extend below as-built conditions, work conducted in native soils below the engineered channel could have a substantial adverse effect on previously undiscovered CEQA-defined historical resources or unique archaeological resources which would be a significant impact.

Other Maintenance Activities

All other categories of maintenance (culvert replacement, stream channel access or clearing, hazardous tree removal, and the reuse of sediments for habitat restoration) include ground-disturbing activities that could impact known or previously undiscovered archaeological or historical resources. Other practices that may impact cultural resources include vegetation management activities such as discing, and minor maintenance activities including minor sediment removal or grading. The effects of these other maintenance activities on known or unknown archaeological or historical resources would be similar to those described for sediment removal and bank stabilization activities.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to minimize the potential for disturbances to archaeological, paleontological, or historical

resources. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* **Table 2-10**.

- **BMP GEN-47: Minimize Impacts to Inadvertently Discovered Cultural Resources** will ensure that work occurring in areas where archaeological or historical resources are identified will be restricted or stopped until an archaeologist determines if the find meets the California or National Register criteria of significance, or if the find is a unique archaeological or tribal cultural resource. If the resource is assessed as significant and cannot be avoided, an Action Plan will be developed including preparation of a data recovery program, as needed.
- **BMP GEN-50: Review of Projects with Native Soil** will ensure that an analysis is conducted of project sites that would involve disturbance/excavation of native soil to determine the potential for affecting archaeological or historical resources. If resources would be impacted and could not be avoided, appropriate management actions (e.g., monitoring during construction, presence/absence testing for subsurface resources, data recovery, etc.) would be developed.

Conclusion

By implementing these BMPs, known cultural resources would be identified, evaluated, and avoided if significant, and procedures would be followed to minimize impacts on previously unknown archaeological or historical resources. Because these BMPs would assure that the Program Renewal would not cause substantial adverse changes in the significance of CEQA-defined historical resources or unique archaeological resources, this impact would be **less than significant,** and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact CR-2: Disturbance of Human Remains (Less than Significant)

Ground-disturbing maintenance activities conducted under the Program would have the potential to unearth human remains, including Native American remains.

Sediment Removal/Bank Stabilization

As described above, sediment removal and bank stabilization activities would involve ground-disturbing activities. These activities could impact human remains, including Native American human remains, which would be a significant impact in the absence BMP GEN-49. Native Americans consider the remains of their ancestors and the offerings buried with them to be sacred and wish to prevent the disturbance of interments.

Other Maintenance Activities

Other proposed maintenance activities (vegetation management, minor maintenance, and management of animal conflicts) would, in some cases, also involve ground-disturbing activities that could potentially impact human remains, including Native American human remains.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to appropriately respond to the discovery of human remains, consistent with requirements of Pub. Res. Code Section 5097.98 and Health and Safety Code Section 7050.5. A full description of this BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-49: Discovery of Human Remains** will ensure that if human remains are identified, all work will be restricted or stopped until proper protocols are met, including meeting the requirements of Pub. Res. Code Section 5097.98 and Health and Safety Code Section 7050.5, which requires work to halt in the vicinity of the find, the County coroner to inspect the find and determine the cause of death. If the find is determined to be Native American in origin, the coroner is required to notify the Native American Heritage Commission, who assigns a Most Likely Descendant. The Most Likely Descendant makes recommendations for the appropriate treatment of the human remains.

Conclusion

By implementing BMP GEN-49, the County coroner would be contacted if human remains are identified and, if determined to be Native American, the Native American Heritage Commission would assign a Most Likely Descendant who would make additional recommendations. The Most Likely Descendant makes recommendations for the appropriate treatment of the human remains. This impact would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact CR-3: Impacts to Sensitive Paleontological Resources (Less than Significant)

The Program Renewal could affect known or unknown paleontological resources during ground-disturbing or excavation activities.

Sediment Removal/Bank Stabilization

Because the majority of sediment removal and bank stabilization activities would be conducted in channels that have been modified from their natural condition, they would not be expected to contain geologic material with a high likelihood of containing paleontological resources. As such, the discovery of paleontological resources during Program Renewal activities is extremely unlikely. However, activities that would result in excavation of native soils, such as bank stabilization, could uncover previously undiscovered paleontological resources.

Other Maintenance Activities

Other proposed maintenance activities (vegetation management, minor maintenance, and management of animal conflicts) could involve ground-disturbing activities, including potential excavation of native soils. The potential effects of these activities on known or

undiscovered paleontological resources would be similar to that described for sediment removal and bank stabilization activities.

Applicable Best Management Practices

The BMP summarized below would be implemented as part of the Program Renewal to minimize the potential for impacts to sensitive paleontological resources. A full description of this BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-48: Discovery of Paleontological Resources** will ensure that work in areas where paleontological resources are identified will be restricted or stopped until a paleontologist performs minor hand-excavation to describe the paleontological resources present and provides treatment recommendations for the find.

Conclusion

BMP GEN-48 would include stop-work and treatment measures in the event of a discovery of paleontological resources. As a result, this impact would be less than significant, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

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3.6 Energy

3.6.1 Introduction

This section evaluates the impacts on energy resources of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal). This analysis evaluates the Program Renewals energy demands; provides input on operation-related energy use; and considers the Program Renewal's size, location, equipment use, and features that could be incorporated to conserve energy resources.

The baseline that was used for the Energy analysis is the existing energy use generated by the current Stream Maintenance Program (SMP-2) activities. To the extent that new areas have been added for the Program Renewal, as well as the addition of new types of treatments requiring new pieces of equipment, an incremental increase in energy use would result in potential increases compared to the current baseline condition's existing energy resources.

3.6.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to energy for the Program Renewal. Applicable regional and local plans, policies, regulations, and ordinances related to energy are described in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C discusses several plans throughout Santa Clara County and local jurisdictions that contain policies aimed at energy conservation and the increase in use of renewable energy sources as well as transitioning to electrical vehicles and equipment. Additionally, the Valley Water Climate Change Action Plan, which is described in Section 3.3, "Air Quality," is relevant to energy because it describes policies for reducing the use of fossil fuels by using electric and alternative fuels for vehicles and off-road equipment, as well as discusses the use of renewable energy sources for electricity generation.

Federal Plans, Policies, Regulations, and Laws

See Section 3.3, "Air Quality," for a full description of the Federal Vehicle Emission Standards, which are relevant to the energy analysis.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 was established in response to the oil crisis of 1973, which increased oil prices due to a shortage of reserves. The Act required that all vehicles sold in the United States meet certain fuel economy goals,[1] known as the Corporate Average Fuel Economy (CAFE) standards. The National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation (DOT) administers the CAFE program, and the U.S. Environmental Protection Agency (USEPA) provides the fuel economy data.

[1] Fuel economy standards are expressed in miles per gallon.

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Energy Policy Act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products. Businesses are eligible for tax credits for buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are given for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment. The Energy Policy Act of 2005 also established the first renewable fuel volume mandate in the United States. The original Renewable Fuel Standard program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012.

Under the Energy Independence and Security Act of 2007, the Renewable Fuel Standard program was expanded to include diesel and to increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.

State Plans, Policies, Regulations, and Laws

See Section 3.3, "Air Quality," for a discussion on transportation-related standards and regulations that also relate to energy. These standards and regulations include the Advanced Clean Truck (ACT) Regulation, Advanced Clean Cars Program, Advanced Clean Fleets (ACF) Regulation, the In-Use Off-road Diesel-Fueled Fleets Regulation, Small Off-road Engine Regulation, and the Portable Equipment Registration Program.

Section 3.7, "Greenhouse Gas Emissions," describes the Renewable Portfolio Standard (RPS) and other related bills for renewable energy generation requirements in California, as well as the Low Carbon Fuel Standard, that are relevant to energy. Section 3.7 also describes Assembly Bill 32 and Senate Bill (SB) 32, the California Global Warming Solutions Act, the Climate Change Scoping Plan, and the Renewable Energy Portfolio, all of which are also applicable to energy.

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

Integrated Energy Policy

In 2002, the Legislature passed SB 1389, which required the CEC to develop an integrated energy plan biannually for electricity, natural gas, and transportation fuels, for the California Energy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles (ZEVs) and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

The latest update is the 2022 Update to the Integrated Energy Policy Report (CEC 2023a). The 2022 Integrated Energy Policy Report (IEPR) Update identifies actions the state and others can take to ensure a clean, affordable, and reliable energy system. The 2022 IEPR Update covers a broad range of topics, including energy reliability and western electricity integration, decarbonizing the electricity sector, and transportation electrification.

Regional Programs

Section 3.7, "Greenhouse Gas Emissions," describes Valley Water's Climate Action Plan (CCAP) and other regional programs that are relevant to energy.

3.6.3 Environmental Setting

Energy resources involve electricity that is transmitted to end users to power electrical equipment and is measured in terms of kilowatts or megawatts. Natural gas is a common form of energy used for electricity generation, heating and industrial processes and is measured in terms of energy content in British thermal units (Btu) or cubic feet of gas. Gasoline and diesel are used in passenger vehicles, heavy-duty vehicles, and off-road equipment to operate the vehicles and equipment and is typically reported in terms of gallons of fuel consumed.

Regional Setting

With a relatively mild Mediterranean climate and strict energy efficiency and conservation requirements, California has lower energy consumption rates on a per person basis than most other parts of the country.

California relies on a regional power system composed of a diverse mix of natural gas, and renewable, hydroelectric, and nuclear generation resources. Approximately 70 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 30 percent, is imported from the Pacific Northwest and the Southwest. In 2021, California's in-state electricity use was derived from natural gas (50 percent), coal (0.2 percent), large hydroelectric resources (6 percent), nuclear sources (9 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (35 percent) (CEC 2022a).

Electricity and natural gas in California are generally consumed by stationary users such as residential, commercial, and industrial facilities, whereas petroleum-based fuel is generally consumed by transportation-related uses (U.S. Energy Information Administration [US EIA] 2022a).

Program Renewal activities would require the use of fuel for vehicles and equipment primarily in the form of gasoline and diesel. Therefore, these energy resources are discussed below in the context of the regional and local setting for the Program Renewal.

Transportation Fuel Generation, Demand, and Use

Fuel is used primarily for powering off-road equipment (construction and operational) and vehicles (commercial trucks and other vehicles). The typical fuel types are diesel and gasoline.

The Northern California region produced an annual average of 6,138,527 thousand gallons of gasoline and 2,363,161 thousand gallons of diesel over the 5-year period of 2018-2022 (CEC 2023b).

California is the seventh largest producer of crude oil and has the third largest refining capacity in the nation (US EIA 2022a). The energy consumed by the transportation sector accounts for roughly 83 percent of California's petroleum products demand (US EIA 2022b). According to the CEC, the state relies on petroleum-based fuels for 98 percent of its transportation needs (US EIA 2022a, 2022b). In 2022, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 12.5 billion gallons of gasoline (California State Board of Equalization [CBE] 2023a), and taxable diesel fuel sales accounted for approximately 2.8 billion gallons of diesel fuel (CBE 2023b).

The CEC forecasts show that the demand for gasoline in California will range from 12.1 billion to 12.6 billion gallons in 2030, with most of the demand generated by light-duty vehicles[2]. While the models show an increase in light-duty vehicles along with population and income growth over the forecast horizon, total gasoline consumption is expected to decline, primarily due to increasing fuel economy (stemming from federal and state regulations) and gasoline displacement from the increasing market penetration of ZEVs. For diesel, demand is forecasted to increase modestly by 2030, following the growth of California's economy, but it will be tempered by an increase in fleet fuel economy and market penetration of alternative fuels, most prominently by natural gas in the medium- and heavy-duty vehicle sectors (CEC 2018).

According to the CEC, in 2021, sales of gasoline and diesel fuel in Santa Clara County were 599 million gallons and 50 million gallons, respectively (CEC 2022b). Note that the CEC only tracks fuel sales at the retail level, which allows for data to be collected on a county-by-county basis, whereas the CBE tracks all fuel sales, retail and non-retail, at the statewide level. Thus, the impact calculations presented in the impact analysis rely on separate data sets for comparison to Santa Clara County and the statewide transportation fuel consumption figures.

Electricity Generation, Demand, and Use

Electricity is used primarily for lighting, equipment, and other uses associated with building, structures, and vehicle operations. Electricity sources range from renewable (hydroelectric, solar, wind, geothermal, biomass) to nonrenewable (natural gas, petroleum, nuclear, coal).

In 2021, total system electric generation for California was 277,764 gigawatt-hours (GWh), up two percent from 2020's total generation of 272,576 GWh (CEC 2022a). Electricity from non–carbon dioxide (CO_2)–emitting electric generation categories (i.e., nuclear, large hydroelectric, and renewable generation) accounted for 49 percent of total in-state generation.

Total system electric generation in California is predicted to increase in coming years. Factors contributing to the projected increase include greater numbers of light duty electric vehicles, increased electricity consumption from manufacturing, and decreases in savings from energy efficiency programs as population increases. With regard to the total consumption of

[2] Light-duty vehicles include passenger and fleet cars and trucks that weigh less than 8,500 pounds.

electricity across all sectors, California consumed 247,250 GWh of electricity in 2021 (US EIA 2022c).

Pacific Gas and Electric Company (PG&E) provides electrical services to most residential, commercial, industrial, and agricultural consumers in much of Northern California, including the Bay Area. In 2021, PG&E generated and/or procured a total of 33,149 GWh of electricity (PG&E 2022a). PG&E has established contracts and commitments to ensure there is adequate electricity generation and natural gas capacity to meet its current and future energy loads (PG&E 2022b).

California law requires load-serving entities (e.g., companies or governments that are obligated by law or via contract to provide electrical power to users) to gradually increase the amount of renewable energy they deliver to their customers to at least 33 percent of their total annual retail sales by 2020, 44 percent by 2024, 52 percent by 2027, 60 percent by 2030, and 100 percent by 2045. This program, the RPS (described under "Regulatory Setting" in Section 3.7, "Greenhouse Gas Emissions"), became effective in December 2011 and has since been enhanced with the passage of SB 350 and SB 100. Renewable generation resources, for purposes of the RPS program, include bioenergy, small hydroelectric facilities (30 megawatts [MW] or less), wind, solar, and geothermal energy. In 2023, PG&E obtained approximately 30 percent of its electricity from renewable sources and delivered 100% greenhouse gas-free electricity to residential and business customers (PG&E 2022c).

Natural Gas Use

Natural gas is used primarily for heating and water heating and is typically associated with building operations.

One third of energy consumed in California is natural gas, which is largely imported from other regions (CEC 2019). Californians consumed 21,728 million therms of natural gas in 2021, which is equal to approximately 2,172,800,000 million Btu (MMBtu) (US EIA 2022d). Nearly 31 percent of the natural gas burned in California is used for electricity generation, and most of the remainder is consumed in the residential (21 percent), industrial (34 percent), and commercial (11 percent) sectors.

PG&E provides natural gas service to industrial, large commercial, natural gas-fired electric generation facilities, and residential users that are connected to the gas system throughout much of northern California, including the Bay Area. In 2021, the total consumption of natural gas in Santa Clara County was 417 million therms, or 41,728,162 MMBtu (CEC 2022b), which was approximately 2 percent of California's total gas consumption.

Valley Water

Electricity Generation

Valley Water participates in the Power and Water Resources Pooling Authority (PWRPA), which consists of publicly owned electric utilities that coordinate pooling of energy resources and supplement wholesale power purchasing. PWRPA coordinates construction and maintenance of the facilities and negotiates agreements. Ninety-five percent of Valley Water's purchased electricity is sourced from PWRPA, which enables Valley Water to source carbon-free electricity from utility-scale solar and hydroelectric projects (Valley Water 2021). Every facility Valley Water operates (office, WTP, pump plant, vehicle charger, etc.) derives power

from PWRPA, with just a small portion of purchased electricity coming from PG&E and/or Community Choice Aggregations as needed. For this reason, Valley Water's electricity-related greenhouse gas (GHG) emissions are almost negligible, since the electricity it buys from PWRPA is emission-free hydropower. Since some of the sources of this carbon-free electricity are based on hydroelectric projects, it is subject to variability, especially during drought conditions. The 2022 Power Content Label for PWRPA is shown in **Table 3.6-1**.

Table 3.6-1. PWRPA 2022 Power Content Label

Energy Resources	Standard Water Portfolio[4]	Zero Carbon Water Portfolio[4]	2022 California Power Mix (for comparison)
Eligible Renewable[1]	25.8%	36.1%	35.8%
Biomass & Biowaste	0.0%	0.0%	2.1%
Geothermal	0.0%	0.0%	4.7%
Eligible Hydroelectric	1.1%	0.3%	1.1%
Solar	24.7%	35.8%	17.0%
Wind	0.0%	0.0%	10.8%
Coal	0%	0%	2.1%
Large Hydroelectric	3.7%	63.9%	9.2%
Natural Gas	5.5%	0%	36.4%
Nuclear	0%	0%	9.2%
Other	0%	0%	0.1%
Unspecified sources of power[2]	58.7%	0%	7.1%
Total[3]	100%	100%	100%

[1] The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.

[2] Unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source.

[3] Numbers may not add to 100% due to rounding.

[4.] As part of the PWRPA 2022 Power Mix, Standard Water Portfolio is the standard mix for clients while the Zero-Carbon Water Portfolio is for clients selecting to use a portfolio that is primarily from hydroelectric and renewables that do not contain carbons, such as from fossil fuel.

Source: PWRPA 2023

Existing SMP-2 Energy Use

Following the methodology described in Section 3.7.4 of using the existing SMP-2 estimate for equipment type and annual activity hours, the estimated annual gasoline usage is 20,611 gallons and annual diesel usage is 777,255 gallons. Further details regarding this emission estimate can be found in **Appendix D**, *Air Quality and GHG Emissions Calculations.*

3.6.4 Impact Analysis

Methodology

The baseline that was used for the energy analysis is the existing energy use generated by the current SMP-2 activities. To the extent that new areas have been added for the Program Renewal, as well as the addition of new types of treatments requiring new pieces of equipment, an incremental increase in energy use would result compared to the existing baseline condition.

CEQA Guidelines Appendix F, *Energy Conservation,* identifies six categories of energy-related environmental impacts, listed below, in order to determine whether a project would result in the wasteful, inefficient, or unnecessary consumption of fuel or energy, and conversely whether the project would fail to incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation or other project features. The six categories of potential energy-related environmental impacts are as follows:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate the energy intensiveness of materials may be discussed.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

The analysis included below for Impact ENE-1 assesses the fuel and electricity consumption of the Program Renewal during operation. The analysis included below for Impact ENE-2 evaluates the Program Renewal for consistency with applicable plans, listed earlier in this section, related to renewable energy and energy efficiency.

The analysis estimates the gasoline, diesel, and electricity consumption associated with the operation of the Program Renewal. Appendix D shows the energy calculations based on the methods and assumptions described below.

All gasoline use is assumed to originate from worker vehicles used in commuting to the Program Renewal work sites. In addition, all worker vehicles commuting to the Program Renewal work sites were conservatively assumed to use gasoline even though other options such as diesel, hybrid, electric and other alternative fuels are possible. Based on the number of worker vehicles trips and total vehicle miles traveled (VMT) specified in **Appendix H**, *Vehicle Miles Traveled (VMT) Calculations*, total worker vehicle miles traveled are estimated. The VMT is multiplied by the fuel efficiency of the vehicles based on EMFAC 2021, the

California Air Resources Board's (CARB's) Emission Factors model (CARB 2021[3]) fuel consumption for light-duty autos and light-duty trucks to yield the amount of gasoline used.

Operational diesel use was assumed to originate from the use of heavy-duty trucks and offroad vehicles. Similar to the estimate for gasoline use, the calculation for estimating diesel use is based on the total vehicle miles traveled by heavy, heavy-duty trucks, all of which are assumed to be diesel. The truck vehicle miles traveled is multiplied by the fuel efficiency of the vehicles based on EMFAC 2021 fuel consumption for heavy, heavy-duty trucks. For offroad equipment, the brake specific fuel consumption factor (or the amount of fuel consumed per horsepower) was based on values used by CARB in its OFFROAD model (CARB 2025). These brake specific fuel consumption factors are multiplied by the horsepower, load factor, and hours of activity to determine the amount of diesel fuel used.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, it was determined that the Program Renewal would result in a significant impact related to energy if it would:

A. Result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during operation of the Program Renewal; or
B. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Environmental Impacts

Impact ENE-1: Result in a Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources (Less than Significant)

All aspects of fossil fuel consumption associated with the Program Renewal were considered in this analysis, including fossil fuel consumption from traffic generated during maintenance activities, worker commutes and material hauling. The following analysis presents the estimated fuel and electricity use during maintenance work.

The Program Renewal would result in an intermittent increase of energy consumption during maintenance activities associated with worker commutes, operation of maintenance equipment, truck trips, and material hauling. Program Renewal maintenance activities are estimated to use 14,614 gallons of gasoline annually and 15,098 gallons of diesel annually from the operation of on-road vehicles (i.e., worker commutes and vehicle hauling), as shown in **Table 3.6-2**. Off-road equipment is estimated to use 6,144 gallons of gasoline annually and 983,182 gallons of diesel fuel annually (Table 3.6-2). The total estimated gasoline use would be 20,758 gallons annually and the total estimate diesel fuel use would be 998,280 gallons annually during maintenance work.

In addition, there may be small amounts of propane and electricity used during the Program Renewal period to power alternative and ZEV equipment; however, there is no reliable

[3] EMFAC is a model developed and used by CARB to assess emissions from on-road vehicles and is approved by US EPA. EMFAC 2021 indicates the version of the software.

information available at this time to estimate energy consumption associated with that equipment. Although some equipment and vehicles would likely use hybrid or alternative fuel technology, this analysis conservatively assumes maximum consumption of diesel and gasoline.

Table 3.6-2. Fuel and Electricity Consumption

Energy Type	Off-Road	On-Road	Total
Gasoline (gallons)	6,144	14,614	20,758
Diesel Fuel (gallons)	983,182	15,098	998,280
Propane	*		*
Electricity (megawatt-hours)	*	*	*

* Estimates of potential propane and electricity use are not available at this time as these do not have readily available estimates for their consumption and have not been extensively used.

Source: Appendix D, Air Quality and GHG Emissions Calculations

Energy use during the Program Renewal would result in increased demand on local and regional supplies of fossil fuel, such as diesel and gasoline. Given that California is the seventh largest producer of crude oil and has the third largest refining capacity in the nation, the amount of fuel consumed during Program Renewal maintenance activities would not have a substantial impact on the availability of these fuels in the state (US EIA 2022a). Any impact on local fuel supplies would be intermittent and would not require an increase in fuel production capacity. Similarly, due to the relatively small demand on gasoline and diesel fuel during the Program Renewal maintenance activities (less than 0.01 percent of California's total production of gasoline and diesel), there would not a be a temporary disruption to local fuel supplies or a need for additional fuel facilities to be constructed. Therefore, impacts on the demand of gasoline and diesel fuel would be minimal.

The electricity that would be consumed during the Program Renewal maintenance activities is unknown at this time due to the lack of historical use of electrical equipment. Program Renewal equipment that is most likely to be electric includes more traditional landscape equipment used for vegetation management such as mowers, chains saws, and leaf blowers which would be charged at Valley Water buildings, while larger pieces of equipment typically used in bank stabilization and sediment removal work may not be feasible to be electric. Valley Water has several of its own electricity-generating projects under PRWPA; these would be unlikely to experience energy supply shortfalls caused by using electrical equipment during implementation of the Program Renewal. Therefore, the peak capacity effect on the transmission grid during the maintenance season would not be substantial. Valley Water has some discretion in its decisions to charge equipment unlike concerns with building ventilation and heating, ventilation, and air conditioning (HVAC) systems or manufacturing operations.

The energy needs for the Program Renewal would be intermittent and occur throughout the primary work season and less frequently during the rest of the year and would not require additional capacity or substantially increase peak or base period demands for electricity and other forms of energy. Thus, energy would not be consumed in a wasteful, inefficient, or unnecessary manner when compared to other activities in the region. Program Renewal

vehicles and equipment would incorporate energy efficiency and renewable features as available.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of Program Renewal to reduce energy use during maintenance activities, although to the exact extent cannot be quantified. Full descriptions of each BMP are provided in Chapter 2, *Project Description.*

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of the work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of GHG emissions.

- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that GHG emissions are reduced.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that impacts to water quality and aquatic species emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

Conclusion

For the reasons described above, the Program Renewal would not result in the consumption of energy in a wasteful, inefficient, or unnecessary manner, BMPs and Mitigation Measure GHG-1 would further reduce energy consumption, and impacts would be **less than significant**.

Mitigation Measures: No mitigation is required.

Impact ENE-2: Conflict With or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency (No Impact)

Energy would be consumed during Program Renewal activities (approximately 20,758 gallons of gasoline and 998,280 gallons of diesel fuel annually) (see Table 3.6-2); however, this amount of energy would not impede or conflict with applicable renewable energy or efficiency plans.

California has developed goals, regulations, and policies related to renewable energy, including the renewable portfolio standard, which requires California to increase the amount of power supplied by renewable electricity sources. In addition to the state policies, general plans, sustainability plans, and climate action plans covering the Program Renewal Area include policies related to renewable energy and energy efficiency. Applicable plans include policies to head toward 100 percent renewable energy by 2045 in line with the Renewable Portfolio Standard, Integrated Energy Policy, Climate Change Scoping Plan, and Valley Water's CCAP; a reduction in the use of fossil fuels and increased use of zero emission vehicles and equipment in line with the Scoping Plan and Valley Water's CCAP; and policies to encourage energy efficiency and conservation in the Climate Change Scoping Plan and Valley Water's CCAP. The Program Renewal would use energy-efficient equipment in line with CARB

fleet and equipment requirements, including the modifications to existing regulations that require the use of renewable diesel fuel, which are on the path to renewable energy and zero emission vehicles and equipment.

Further, Valley Water's continued participation in PWRPA would enable ongoing incorporation of renewable energy into the electricity supply. As described above, the Program Renewal would not generate energy demand from the electrical grid to warrant the construction or operation of additional energy infrastructure. The Program Renewal primarily involves the use of fossil fuels and alternative fueled equipment and vehicles and would not have a significant draw on electrical resources. Additionally, the use of gasoline and diesel fuel during Program Renewal activities would be intermittent throughout the year.

Based on the above analysis, Program Renewal activities would not conflict with or obstruct a renewable energy or energy efficiency plan.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to reduce energy use during maintenance activities, although to the exact extent cannot be quantified. Full descriptions of each BMP are provided in Chapter 2, *Project Description.*

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of the work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of GHG emissions.
- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that GHG emissions are reduced.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that impacts to water quality and aquatic species emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

Conclusion

Program Renewal maintenance activities would comply with existing energy standards and for the reasons described above, would not conflict with a renewable energy or energy efficiency plan. Impacts would be **less than significant,** and no mitigation is required.

Mitigation Measures: No mitigation is required.

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3.7 Greenhouse Gas Emissions

3.7.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) related to climate change and greenhouse gas (GHG) emissions.

Data sources used in the preparation of this section include state and federal regulations and reference materials from the California Air Resources Board (CARB) and the Bay Area Air District analyzes GHG impacts from Program Renewal maintenance activities.

3.7.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to climate change and GHG for the Program Renewal. Regional programs related to climate change and GHG are also presented below. Applicable regional and local plans, policies, and regulations or ordinances related to climate change and GHG are presented in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C discusses several plans throughout the County and local jurisdictions that contain policies aimed at GHG emission reduction and adaptation to climate change. This includes policies aimed at GHG emissions reductions from mobile sources, reduction in vehicle miles traveled (VMT), increased use of renewable energy, water conservation, fire and flood planning as well as sea level rise planning, and transitioning to electrical vehicles and equipment.

Federal Plans, Policies, Regulations, and Laws

See Section 3.3, "Air Quality," for a full description on the Federal Vehicle Emission Standards, which are relevant to the GHG analysis.

State Plans, Policies, Regulations, and Laws

See Section 3.3, "Air Quality," for a discussion on transportation related standards and regulations that also relate to GHG emissions. These standards and regulations include the Advanced Clean Truck (ACT) Regulation, Advanced Clean Cars Program, Advanced Clean Fleets (ACF) Regulation, the In-Use Off-road Diesel-Fueled Fleets Regulation, Small Off- road Engine Regulations, and the Portable Equipment Registration Program.

Assembly Bill 32 and Senate Bill 32 – California Global Warming Solutions Act

In September 2006, then-Governor Schwarzenegger signed the California Global Warming Solutions Act (Assembly Bill [AB] 32). AB 32 (Health and Safety Code, Division 25.5) establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was intended to be accomplished by enforcing a statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directed the California Air Resources Board (CARB) to develop and implement regulations to reduce statewide GHG emissions from stationary sources.

In 2016, Senate Bill (SB) 32 and its companion bill AB 197 amended Health and Safety Code, Division 25.5 Section 38500 et seq. and established a new GHG reduction target of 40 percent below 1990 levels by 2030, and 85 percent below 1990 levels for anthropogenic emission by 2045, with an aspirational goal of carbon neutrality by 2045. The bills also include provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

Assembly Bill 1279

AB 1279 (2022) of 2022 (Health and Safety Code Section 38562.2) requires California to achieve net zero GHG emissions as soon as possible but no later than 2045 and maintain net negative GHG emissions thereafter. By 2045, anthropogenic GHG emissions must be reduced by at least 85 percent below 1990 levels.

2022 Scoping Plan for Achieving Carbon Neutrality

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020. CARB developed and approved the initial Scoping Plan in 2008, outlining the regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs that would be needed to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives (CARB 2009).

Most recently, CARB approved the 2022 *Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) in December 2022. The 2022 Scoping Plan outlines the proposed framework of action for achieving the 2045 GHG target of an 85 percent reduction in anthropogenic GHG emissions relative to 1990 levels; the update also adds carbon neutrality as a science-based guide for California's climate work (CARB 2022). The 2022 Scoping Plan outlines how carbon neutrality can be achieved to reduce GHGs to meet the emission targets by reducing anthropogenic (human-caused) emissions and expanding actions to capture and store carbon. New to the 2022 Scoping Plan is a commitment to incorporate and quantify natural and working lands as a key component to GHG reductions and actions around capture and storage of carbon. The 2022 Scoping Plan strategy for meeting the state's 2030 GHG target incorporates the full range of legislative actions and state-developed plans that have relevance to the year 2030. The 2022 Scoping Plan is heading toward the 2045 anthropogenic target of 85 percent below 1990 levels and an aspirational goal of carbon neutrality, including the following reductions in key sectors relevant to the Program Renewal:

- The transportation sector targets reductions based on the technology of vehicles and associated refueling infrastructure for those vehicles; the fuel used as the energy source to power vehicles and the facilities that produce them; and vehicle miles traveled (VMT), which relates to development patterns and available transportation options.

  The electricity grid sector has a target of 38 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2030 and 30 $MMTCO_2e$ in 2035, which includes a goal of generating 20 gigawatts of offshore wind by 2045 and specifies that the increased demand for electrification occurs without new fossil gas–fired resources.

Natural and working lands sectors include targets to conserve natural working lands and coastal waters, and to implement actions to accelerate natural removal of carbon and improve resilience to climate change.

In the 2022 Scoping Plan, CARB recommends statewide targets of no more than 226 $MMTCO_2e$ from AB 32 GHG inventory sector emissions. For the 2045 scenario in the 2022 Scoping Plan, maximum GHG emissions from AB 32 inventory sector emissions are 65 $MMTCO_2e$.

Appendix D of the 2022 Scoping Plan provides guidance for GHG analyses in local agency California Environmental Quality Act (CEQA) documents. The guidance is focused on land use plans and projects, but some of it can also apply to water and infrastructure projects. In particular, Section 3.2.2 of the 2022 Scoping Plan generally endorses a net-zero threshold of significance, while noting that it may not be feasible or appropriate for every project. Also, Section 4.1 of the 2022 Scoping Plan recommends a "mitigation hierarchy" not found in the CEQA Guidelines. CARB recommends prioritizing CEQA GHG mitigation according to a geographic hierarchy and includes carbon offsets as an option.

Executive Order S-13-08 and SB 1320

Then-Governor Schwarzenegger signed Executive Order (EO) S-13-08 on November 14, 2008. The order called on state agencies to develop California's first strategy to identify and prepare for expected climate impacts. As a result, the *2009 California Climate Adaptation Strategy* (CAS) report was developed to summarize the best-known science on climate change impacts in the state, assess vulnerability, and outline possible solutions that can be implemented in and across state agencies to promote resiliency (California Natural Resources Agency [CNRA] 2009); it was updated in 2014, 2018, and 2021 (CNRA 2014, 2018, 2021). The fifth update is currently being prepared. The state has also developed an Adaptation Planning Guide (California Emergency Management Agency [CEMA] 2012) to provide a decision-making framework intended for use by local and regional stakeholders to aid in the interpretation of climate science and develop a systematic rationale for reducing risks caused or exacerbated by climate change. In 2020, SB 1320 codified the requirement for coordination with the California Governor's Office of Planning and Research (OPR) and CNRA, State Energy Resources Conservation and Development Commission, and the Strategic Growth Council to develop the California Climate Change Assessment at least every 5 years.

California's Wildfire and Forest Resilience Action Plan

The Wildfire and Forest Resilience Action Plan (Action Plan) (Forest Management Task Force 2021) is designed to strategically accelerate efforts to: restore the health and resilience of California forests, grasslands, and natural places; improve the fire safety of our communities; and sustain the economic vitality of rural forested areas. The Action Plan serves as a roadmap for implementing the Agreement for Shared Stewardship of California's Forest and Rangelands with the United States Forest Service, and for aligning the state's efforts with other federal, local, tribal, regional, and private organizations.

Renewables Portfolio Standard

The state of California adopted standards to increase the percentage of energy from renewable resources that retail sellers of electricity, including investor-owned utilities and

community choice aggregators, and it must be provided in their portfolio. The Renewables Portfolio Standard (RPS) was established in 2002 under SB 1078, accelerated in 2006 under SB 107, and expanded in 2011 under SB 2. The standards are referred to as the RPS. Qualifying renewables under the RPS include bioenergy such as biogas and biomass, small hydroelectric facilities (30 megawatts [MW] or less), wind, solar, and geothermal energy. The California Public Utilities Commission (CPUC) and California Energy Commission (CEC) jointly implement the RPS program.

In November 2008, then-Governor Schwarzenegger signed EO S-14-08, which expanded the State's RPS to 33 percent renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the RPS by signing EO S-21-09, which directed CARB to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020.

Senate Bill 350 Clean Energy and Pollution Reduction Act (SB 350)

SB 350, also known as the Clean Energy and Pollution Reduction Act of 2015, was enacted on October 7, 2015, and provides a new set of objectives in clean energy, clean air, and pollution reduction by 2030. The objectives include the following:

1. To increase the procurement of California's electricity from renewable sources from 33 percent to 50 percent by December 31, 2030.
2. To double the energy efficiency savings in electricity and natural gas final end uses (e.g., to heat and cool spaces, power appliances, power lights, and heat water) of retail customers through energy efficiency and conservation.

100 Percent Clean Energy Act (SB 100)

On September 10, 2018, then-Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also creates new standards for the RPS goals that were established by SB 350 in 2015. Specifically, SB 100 increases required energy from renewable sources for both Investor-Owned Utilities and Publicly Owned Utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers are also required to have a renewable energy supply of 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

Clean Energy, Jobs, and Affordability Act (SB 1020)

SB 1020, also known as the Clean Energy, Jobs, and Affordability Act of 2022, establishes the requirement that eligible renewable resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035; 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040; 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045; and 100 percent of electricity procured to serve all state agencies by December 31, 2035. It also contains provisions for cooperation between CPUC and Independent System Operators (ISOs) providing electricity for the purpose of transmission planning by allowing the exchange of confidential business information without risk of public disclosure requirements.

Low Carbon Fuel Standard (Executive Order S-1-07)

The Low Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products that started with a 0.25-percent reduction in 2011 and culminated in a 10 percent total reduction in 2020. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the program, including a doubling of the carbon intensity reduction to 20 percent by 2030.

Petroleum importers, refiners, and wholesalers can either develop their own low carbon fuel products or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

Regional Programs

Bay Area Air District CEQA Air Quality Guidelines

In June 2010, the Bay Area Air Quality Management District (now Bay Area Air District) Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Air Quality Guidelines, which included significance thresholds for GHG emissions based on the emission reduction goals for 2020 articulated by the California State Legislature in AB 32. These thresholds were revised in the Bay Area Air Quality Management District 2022 CEQA Guidelines for land use plans and projects,[1] shifting from a "brightline" threshold, which is a level of emissions not to exceed regardless of the size or scope of the project, to a threshold requiring either compliance with a prescriptive list of project design elements for buildings and transportation or consistency with a local GHG reduction strategy that meets the criteria cited in CEQA Guidelines Section 15183.5(b) (BAAQMD 2022).

Although the 2022 CEQA Guidelines recommend GHG thresholds of significance for land use plans and projects, they do not recommend GHG thresholds of significance directly relevant to the Program Renewal (i.e., for stream maintenance activities). The Bay Area Air Quality Management District's 2022 CEQA Guidelines discuss general GHG mitigation approaches for land use plans and projects, and for stationary sources, but do not specifically recommend GHG mitigation measures relevant to operational emissions from stream maintenance activities. The Bay Area Air Quality Management District notes that its guidelines are nonbinding recommendations intended to assist lead agencies, and they may be updated as needed in the future; any updates will also be nonbinding and advisory.

Valley Water Climate Change Action Plan

Valley Water's Climate Change Action Plan (CCAP) is Valley Water's guide to addressing climate change in its mission areas of water supply, flood protection, and ecosystem stewardship. This plan builds upon Valley Water's existing climate change efforts, such as reduction of Valley Water's greenhouse gas emissions and commitment to carbon neutrality, and adaptation of operations to the changing climate. Following an extensive stakeholder

[1] Land use projects are typical projects that develop land into residential, commercial, and government uses such as buildings and traffic improvements.

review process, the CCAP was adopted by Valley Water's Board of Directors on July 13, 2021 (Valley Water 2021).

The CCAP provides goals, strategies, and possible actions to address Valley Water's vulnerability to climate change impacts in each of Valley Water's mission areas, including water supply, flood protection, and ecosystem stewardship. There are seven goals in the CCAP to help guide Valley Water's response to climate change. The first three goals focus on the reduction of Valley Water's greenhouse gas emissions and the final four goals aim to help adapt to climate change. **Table 3.7-1** outlines the goals and strategies contained in the CCAP.

Table 3.7-1. Goals and Strategies from the Climate Change Action Plan

Goal / Strategies
Goal 1: Reduce Direct Greenhouse Gas Emissions
• Reduce GHG emissions associated with the Valley Water fleet
• Reduce GHG emissions from trips between Valley Water offices and work sites
• Reduce GHG emissions associated with Valley Water-owned equipment
• Minimize GHG emissions associated with planning, design, construction, operation, and maintenance of capital projects
• Increase GHG sequestration on Valley Water properties and other areas
• Continue to update Valley Water's GHG accounting practices
Goal 2: Expand Renewable Energy and Improve Energy Efficiency
• Continue to support increased renewable energy in the agency's energy portfolio
• Continue to support increased renewable energy in the agency's energy portfolio
• Continue to improve energy efficiency at agency facilities
Goal 3: Reduce Indirect Greenhouse Gas Emissions
• Reduce emissions from Valley Water employee commutes
• Reduce waste produced at facilities
• Continue to create and expand other efforts to minimize indirect emissions
Goal 4: Water Supply Adaptation
• Diversify local water supplies and expand drought-resistant water supply
• Improve demand management and increase water conservation efforts
• Increase reliability of imported water
• Support efforts to maintain and enhance source water quality
• Implement source water improvement and water treatment actions
• Increase flexibility and resilience of water utility operations and assets
• Support ecological water supply management objectives
Goal 5: Flood Protection Adaptation in Santa Clara County

Goal / Strategies
• Minimize riverine flooding risks
• Minimize flood risk in coastal areas
• Improve the flood preparedness of people, property, and habitat
• Implement projects and plans to increase the flexibility and resilience of flood protection operations and assets
• Expand the use of flood forecasting and modeling tools in the planning and design of agency projects to maximize protection from flood risks
Goals 6: Ecosystem Adaptation in Santa Clara County
• Expand the availability of data on regional ecosystems to avoid detrimental climate change-related ecosystem impacts
Goal 7: Emergency Preparedness
• Maximize Valley Water's emergency preparedness for climate-related impacts

Source: Valley Water 2021

Valley Water Ends Policy No. E-5

In July 2021, Valley Water's Board of Directors adopted the Climate Change Mitigation and Adaptation Ends Policy No. E-5: "Valley Water is carbon neutral and provides equitable, climate-resilient water supply, flood protection, and water resource stewardship to all communities in Santa Clara County. This will be accomplished through the implementation of the Climate Change Action Plan." Applicable goals and objectives are as follows:

CCMA GOAL 5.1: Minimize greenhouse gas emissions from Valley Water's operations.

CCMA Objective

5.1.1: Expand the use of clean technology in vehicles, equipment, and buildings, and develop carbon-efficient construction and service delivery practices.

5.1.2: Optimize energy use and expand renewable energy portfolio.

5.1.3.: Incentivize low carbon practices, projects, and efforts by employees, contractors, and partners. Adapt Valley Water's assets and operations to reduce climate change impacts.

CCMA GOAL 5.2: Adapt Valley Water's assets and operation to reduce climate change impacts.

CCMA Objective

5.2.1: Improve the resiliency of Santa Clara County's water supply to drought and other climate change impacts.

5.2.2: Provide equitable protection from sea level rise and flooding, prioritizing disadvantaged communities.

5.2.3: Improve ecosystem resiliency through water resources stewardship.

5.2.4: Prepare for climate-related emergencies and provide equal access to information and services, particularly to disadvantaged communities.

Valley Water Greenhouse Gas Reduction Plan

Valley Water is preparing a Greenhouse Gas Reduction Plan (GHGRP) that is consistent with the framework outlined under CEQA Guidelines Section 15183.5 and is anticipated to be adopted in 2025. An administrative draft of the GHGRP was released to the public in December 2024 (Valley Water 2024). The GHGRP provides an inventory of Valley Water's GHG emissions through 2021, a forecast of future GHG emissions, and a list of measures to achieve a goal of net zero emissions by 2045. It provides specific measures to reduce GHG emissions and metrics to measure progress and will be considered for adoption in a public process following preparation of a CEQA document analyzing potential environmental impacts of the GHGRP. Consistency with the GHGRP can be used in the future, once it is adopted and the CEQA document certified, to streamline CEQA compliance for future Valley Water projects.

Current reduction measures described in the GHGRP to achieve net zero emissions by 2045 include the following:

VF-1: Zero Emission On-Road Fleet: Convert 35% of on-road fleet fuel use to zero-emission fuels (e.g., electricity, renewable diesel, hydrogen) by 2030 and 100% by 2045.

OF-1: Zero Emission Off-Road Fleet: Convert 50% of Valley Water's off-road fleet conventional diesel use to zero-emission fuels by 2030 and 100% by 2045 regardless of engine tier.

HG-1: Phase Out High-GWP [-Global Warming Potential] Refrigerants: Replace high-GWP refrigerants with low-GWP alternatives above and beyond the requirements of SB 1206.

FE-1: Facility Electrification: Electrify 30% of existing facility natural gas use by 2030 and 60% by 2045.

EC-1: Reduce Employee Commute Emissions: Implement incentives to encourage employees to reduce their VMT or reduce emissions from their commute vehicles.

SW-1: Increase Solid Waste Diversion: Divert 80% of waste from Valley Water offices from landfills by 2030 and 90% by 2045. Improve solid waste tracking by conducting regular assessment of waste characterization.

CN-1: Zero Emission Off-Road Construction Equipment: For all contracted construction projects, require the use of zero-emission fuels (e.g., electricity, renewable diesel, biodiesel, hydrogen) instead of conventional diesel in 17% of off-road construction equipment fuel use in equipment greater than 25 hp [horsepower] by 2030 and 45% by 2045 regardless of the engine tier.

CN-2: Zero Emission On-Road Construction Vehicles: For all contracted construction projects, require the use of zero-emission fuels (e.g., electricity, renewable diesel, biodiesel, hydrogen) instead of conventional fuel in 35% of on-road construction vehicle fuel use by 2030 and 95% by 2045.

WA-1: Community-Wide Water Conservation: Conserve 96,800 acre-feet of water per year by 2030 and 118,000 acre-feet by 2045.

CS-1: Carbon Sequestration: Sequester carbon in habitat enhancement and restoration projects. Collaborate with regional conservation agencies to develop habitat enhancement and restoration above and beyond project mitigation requirements.

CS-2: Purchase Carbon Offsets: If necessary, purchase carbon offsets from verified offset registries prioritizing local or regional projects and, if necessary, projects outside of the state, but within the United States. Prohibit carbon offset purchases that are unverified or located in locations outside the United States.

3.7.3 Environmental Setting

This section discusses greenhouse gases and anticipated climate change conditions in the Program Renewal Area.

Greenhouse Gases and Climate Change

GHGs are gases that trap heat in the atmosphere by allowing sunlight to enter the atmosphere but trapping a portion of the outward-bound infrared radiation, which warms the air. The process is similar to the effect of greenhouses, which are used to grow plants year-round even during cold months. In greenhouses, the internal temperatures increase, and gases are trapped—thus the name "greenhouse gas."

Global climate change is the result of a change in the prevailing weather patterns on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors) and toxic air contaminants (TACs), which are pollutants of regional and local concern. Both natural processes and human activities emit GHGs. The natural accumulation of GHGs in the atmosphere regulates the Earth's temperature; however, emissions from human activities, such as fossil fuel–based electricity production and the use of internal combustion engines and motor vehicles, have elevated the concentration of GHGs in the atmosphere since the start of the industrial revolution. This human-caused (anthropogenic) accumulation of GHGs has contributed to an increase in the temperature of the Earth's atmosphere and has contributed to global climate change.

Although there is disagreement as to the rate of global climate change, multiple studies published in peer-reviewed scientific journals show that 97 percent or more of actively publishing scientists agree: climate-warming trends over the past century are very likely due to human activities (National Aeronautics and Space Administration 2015). Emissions of carbon dioxide (CO_2) and nitrous oxide (N_2O) are byproducts of fossil fuel combustion, but are also emitted from other sources, including cement manufacture and land use changes (such as converting grassland to urban development). Methane (CH_4), a highly potent GHG,

results from off-gassing associated with agricultural practices and landfills, as well as from incomplete combustion of fossil fuels.

The principal GHGs are CO_2, CH_4, N_2O, sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and nitrogen trifluoride (NF_3). CO_2 is the reference gas for estimating GHG emissions; that is, the global warming potential (GWP) of CO_2 is used as the standard by which other GHGs are measured. To account for the GWP of different GHGs, emissions are often quantified and reported as CO_2 equivalents (CO_2e), a measure of how much global warming a given type and mass of GHG may cause compared to the equivalent amount of CO_2. For example, SF_6 is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF_6, while comprising a small fraction of the total GHGs emitted annually worldwide, is a much more potent GHG, with 22,800 times the GWP of CO_2. GHG emissions are commonly reported in units of metric tons, rather than the more common U.S. short tons, because GHG emissions are commonly compared on a global scale.

GWP ratios are provided by the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories were calculated using ratios from the IPCC's Second Assessment Report (SAR), published in 1996. The IPCC has since updated the ratios based on the latest science in its Fourth, Fifth, and Sixth Assessment Reports (IPCC 2007, 2015, 2022). CARB currently uses GWP ratios from the Fourth Assessment Report (IPCC 2007) for the statewide GHG emissions inventory (CARB 2024), as well as in the current version of the California Emissions Estimator Model (CalEEMod) (California Air Pollution Control Officers Association 2022) that was used to calculate CO_2e values for the Program Renewal. Compounds that are regulated as GHGs are discussed in more detail below.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter[2], and; and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural CO_2 removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of human-made CO_2; consequently, the gas is building up in the atmosphere. CO_2 accounted for approximately 80 percent of anthropogenic GHG emissions in California in 2019 (CARB 2022).

Methane

CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation in animals, manure management, and rice cultivation are also large sources of CH_4 in California. Methane is also

[2] Organic matter is matter composed of organic compounds that come from the remains of organisms such as plants and animals.

released at points of natural gas extraction and in leakages throughout the gas pipeline system.

The GWP of CH_4 is considered by CARB to be approximately 25 times that of CO_2 as averaged over a 100-year timescale. On this timescale, CH_4 accounted for approximately 9 percent of anthropogenic GHG emissions in California in 2019 (CARB 2022). However, because CH_4 breaks down rapidly into CO_2 and water once in the atmosphere, there is growing recognition among climate scientists that a 20--year time horizon is more relevant. The 20-year GWP of CH_4 is between 84 and 87 times greater than that of CO_2. That means methane is a much larger contributor to California's anthropogenic GHG emissions over the shorter time frame of 20 years than originally calculated over 100 years.

Nitrous Oxide

N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. N_2O has a GWP of approximately 298 times that of CO_2, and its emissions accounted for approximately 3 percent of anthropogenic GHG emissions in California in 2019 (CARB 2022).

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for ozone-depleting substances and have global warming potentials that range from hundreds to thousands of times that of CO_2. PFCs and SF_6 are emitted from various industrial processes, including semiconductor manufacturing and electric power transmission and distribution. These accounted for approximately 6 percent of anthropogenic GHG emissions in California in 2019 (CARB 2022).

Nitrogen Trifluoride

NF_3 is primarily used in manufacturing semiconductor and liquid crystal display (LCD) panels, certain types of solar panels, and chemical lasers. The ability to measure NF_3 atmospheric concentrations has only recently become possible, and this has revealed much higher concentrations than originally assumed. This is a major cause of concern because NF_3 is an extremely potent GHG and has a GWP of 17,200 times that of CO_2 (WRI and WBCSD 2013).

Effects of Climate Change

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of the following: local effects of climate change; occurrence, frequency, and magnitude of extreme

weather events; effects of aerosols; changes in clouds; shifts in the intensity and distribution of precipitation; and changes in oceanic circulation.

For California, projected effects from climate change are described in California's Fourth Climate Change Assessment (California Climate Change Center [CCCC] 2019). Based on projections using climate modeling, temperatures in California are expected to rise between 5.6 degrees Fahrenheit (°F) and 8.8°F above year 2000 averages by 2050 (CCCC 2019). The predicted changes in the future climate have been found to affect the natural environment in California in the following ways (CCCC 2012, 2019):

- Increased wildfire risk and wildfire severity;
- Adverse effects on native freshwater fish species;
- Increased ground-level ozone levels and particulate air pollution;
- Earlier snowmelt and runoff;
- Faster-than-historical sea level rise and increased coastal flooding; and
- Impacts on the agricultural industry from population decreases of pollinators and increases of pests and disease.

These changes in California's climate and ecosystems are projected to occur because California's population is expected to increase from 40 million in 2020 to 45 million by 2050 (California Department of Finance [CDF] 2023a). As the population increases, the demand for transportation, water, and electrical utilities, as well as other commodities, will increase correspondingly, resulting in an increase in the amount of anthropogenic GHG emissions anticipated under a "business as usual" scenario.

Although the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be substantial. All of these impacts would have either direct or indirect adverse effects for the residents and businesses in and near the Program Renewal Area.

Emissions Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks (things that absorb more carbon than they release, such as plants, ocean, and soil) of GHGs is a well-recognized and useful tool for addressing human society's contributions to climate change. This section summarizes the latest information on global, United States, California, and local GHG emission inventories available at the time of Draft EIR preparation.

U.S. Emissions

In 2022, the United States emitted about 5,489 $MMTCO_2e$ after accounting for land sequestration.[3] Of the major sectors nationwide, transportation accounted for the highest amount of GHG emissions (approximately 28 percent), followed by electricity (25 percent), industrial (23 percent), commercial and residential (13 percent), and agriculture

[3] Land sequestration is the storage of carbon and nitrogen that is stored for a period of time in the land, such as in the roots and vegetation of plants or absorbed in water in the ocean.

(10 percent). Between 1990 and 2022, total net U.S. GHG emissions decreased by 2 percent. Since peaking in 2005, total net emissions have decreased by about 17 percent (U.S. Environmental Protection Agency [USEPA] 2024).

State of California Emissions

CARB compiles GHG inventories for the State of California. Based on CARB's 2022 GHG inventory data, California emitted 371.1 $MMTCO_2e$, including emissions resulting from imported electrical power (CARB 2024). Between 1990 and 2022, the population of California grew by approximately 9.7 million (from 29.8 to 39.1 million) (CDF 2023a), representing an increase of approximately 31 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $773 billion in 1990 to $3.60 trillion in 2022, representing an increase of approximately 365 percent (over four times the 1990 gross state product) (CDF 2023b). Despite this population and economic growth, CARB's 2022 statewide inventory indicates that California's net GHG emissions in 2022 were below 1990 levels of 431 $MMTCO_2e$, which was the 2020 GHG reduction target codified in Health and Safety Code, Division 25.5, also known as the Global Warming Solutions Act of 2006 (AB 32). The 2022 data continued to show a long-term trend of decreasing GHG emissions and showed that emissions were 9.3 $MMTCO_2e$ lower than 2021.

Valley Water Emissions

The most recent final emissions inventory for Valley Water is presented in the 2021 Climate Change Action Plan, which summarizes GHG emissions and offsets from 2010 to 2017. **Table 3.7-2** shows that, since 2014, the CCAP concludes that Valley Water has achieved carbon neutrality.

Table 3.7-2. Valley Water Estimated GHG Emissions and Offsets 2010-2017

Calendar Year	2010	2011	2012	2013	2014	2015	2016	2017
Emissions	***22,100***	***2,300***	***2,500***	***2,800***	***3,000***	***2,100***	***2,100***	***2,400***
Scope 1: Direct Emissions from District Operations	2,200	2,300	2,500	2,800	3,000	2,100	2,100	2,400
Scope 2: Emissions from Purchased Electricity	2,200	500	3,400	4,000	6,000	6,300	200	200
Scope 3: Other Emissions	17,700	19,000	23,900	22,900	9,500	13,800	13,900	12,700
a. State Water Project	14,800	16,100	21,000	20,000	6,600	10,900	12,100	11,000
b. Central Valley Project	0	0	0	0	0	0	0	0
c. Import from SFPUC	0	0	0	0	0	0	0	0
d. Employee Commute	1,500	1,500	1,500	1,500	1,500	1,500	1,700	1,600
e. Business Travel	1,400	1,400	1,400	1,400	1,400	1,400	100	100
Reduction/Sequestration	***22,370***	***23,060***	***24,400***	***23,110***	***24,080***	***24,235***	***19,135***	***19,235***
1. Water Conservation Program	17,100	17,800	18,400	16,700	17,600	17,800	13,900	14,400
2. Recycled Water	2,500	2,500	3,000	3,500	3,700	3,400	3,200	2,800
3. Carbon Sequestration	500	500	500	500	500	500	500	500

Calendar Year	2010	2011	2012	2013	2014	2015	2016	2017
4. Green Business Program	2,200	2,200	2,200	2,200	2,200	2,200	1,200	1,200
5. Energy Optimization Measures	70	60	300	210	80	335	335	335
Carbon Neutrality*	***270***	***1,260***	***-5,400***	***-6,590***	***5,580***	***2,035***	***2,935***	***3,935***

Note: All measurements are in metric tons of carbon dioxide equivalents (MT CO_2e).

* Positive value for carbon neutrality indicates exceeding net neutral.

Source: Valley Water 2021

3.7.4 Impact Analysis

Methodology

The baseline that was used for the GHG emissions analysis is the existing GHG emission levels generated by the current Stream Maintenance Program (SMP-2) activities. To the extent that new areas have been added for the Program Renewal, as well as the addition of new types of treatments requiring new pieces of equipment, an incremental increase in GHG emissions would result to potentially new and existing sensitive receptors compared to the existing baseline condition.

Although Program Renewal activities would be countywide, transitory, and short term, similar to construction activities, they would serve the purpose of maintaining existing features rather than constructing new features. Therefore, as discussed in Section 3.3, "Air Quality," the Bay Area Air District has indicated that emissions resulting from Program Renewal activities would be considered operational emissions for the purposes of estimating air quality impacts. GHG emissions from Program Renewal activities were estimated for two sources: off-road vehicles and on-road vehicles.

Off-road vehicle and on-road vehicle emissions were estimated using CalEEMod version 2022.1.1.29 (CAPCOA 2022). Information on equipment size and activity for 2023 was provided by Valley Water. It was assumed that equipment used currently, and in the future, will be Tier 4 final engines for off-road equipment. Valley Water indicated that some of their equipment in the past used liquefied petroleum gas (LPG). LPG was not incorporated into the analysis since the CalEEMod GHG emissions model does not include default emission factors for these pieces of equipment; instead, equipment using LPG was treated as being diesel equipment. Based on the change from existing (SMP-2) miles for a 7-year period to the Program Renewal's miles treated for a 10-year period, a factor of 1.29 was used to scale up the activity of the equipment and vehicles unless other information about future activity was provided by Valley Water. Details of the CalEEMod inputs and outputs are found in **Appendix D**, *Air Quality and Greenhouse Gas Emission Calculations,* for both current SMP-2 and Program Renewal scenarios.

The GHG emissions from pesticide use under the Program Renewal would be extremely small in the context of the overall Program emissions. Therefore, they were not included in the emissions calculations and are not anticipated to result in any material change in the magnitude of the impact.

The existing SMP-2 emissions are subtracted from the anticipated Program Renewal emissions to provide the incremental change in emissions from baseline. The incremental change from the existing baseline conditions is the Program Renewal impact used to make a comparison to the CEQA significance thresholds.

Criteria for Determining Significance

For the purposes of this analysis, the Program Renewal would result in a significant impact on global climate change if it would:

A. generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

B. conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Note that emissions associated with the Program Renewal were estimated for the various maintenance activities as a whole; for this reason, the impact discussion in this section is not broken down by the individual activities.

The Bay Area Air Quality Management District CEQA Air Quality Guidelines (BAAQMD 2023) do not contain any quantitative significance thresholds for operational GHG emissions or prescriptive measures for infrastructure projects since Valley Water did not have an adopted qualified GHGRP at the time of Draft EIR preparation. The Bay Area Air District does not have any guidance for analyzing operational emissions for projects that are not land use projects, stationary sources, or under a local GHG reduction strategy.

The impact analysis evaluates whether implementation of the Program Renewal would result in significant impacts related to GHG levels based on the anticipated maintenance activities required for the Program Renewal. For Impact GHG-1, the SEIR uses a net-zero threshold, which is conservative and consistent with Scoping Plan guidance. For Impact GHG-2, the GHG emissions are compared to the GHG reduction targets set forth in SB 32 and applicable strategies outlined in the latest Scoping Plan.

Environmental Impacts

Impact GHG-1: Generate GHG Emissions, Either Directly or Indirectly, that may have a Significant Impact on the Environment (Less than Significant with Mitigation)

Use of vehicles and equipment for Program Renewal maintenance activities would require fossil fuel combustion that would generate GHG emissions. This analysis considers emissions from both existing SMP-2 activities (which are used as the existing conditions baseline) and additional emissions resulting from implementation of the Program Renewal. **Table 3.7-3** summarizes annual emissions estimates for the existing SMP-2 and for the Program Renewal. For additional information on how emissions were estimated refer to Appendix D.

Table 3.7-3. Existing and Program Renewal Proposed Annual CO_2e Emissions

Emissions Source	Existing Estimated Emissions	SMP-3 Proposed Estimated Emissions
Off-Road & On-Road	2,841	3,673
Pesticide Use	-	-
Total	*2,841*	*3,673*
Bay Area Air District Threshold	None	None

Note: All emission estimates are in metric tons per year.

Source: Appendix D, Air Quality and Greenhouse Gas Emission Calculations

Table 3.7-3 shows that annual emissions from the Program Renewal would increase because of updated projections, which was accounted for using an additional 1.29 factor to reflect the estimated increase of work to be completed. The net increase in GHG emissions for the Program Renewal compared to existing SMP-2 GHG emissions is 832 $MTCO_2e$ per year, conservatively based on using 2026 emission factors. Future emission factors are anticipated to decrease and this would decrease the estimated emissions.

The rate of CO_2e emissions would decrease between 2027 and 2036, primarily because of Valley Water's tiered vehicle and equipment replacement programs that are consistent with its CCAP. Nevertheless, the Program Renewal would generate additional GHG emissions, which would have a significant impact on the environment.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of Program Renewal to reduce GHG emissions during maintenance activities, although to the exact extent cannot be quantified. Full descriptions of each BMP are provided in Chapter 2, *Project Description*.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of the work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of GHG emissions.
- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that GHG emissions are reduced.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that impacts to water quality and aquatic species emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

Conclusion

Table 3.7-3 shows that annual emissions of GHGs from Program Renewal would increase compared to existing GHG emissions. Since there is an increase in the future GHG emissions even with implementation of BMPs, this would be a **significant impact.**

Implementation of mitigation measures would reduce the impacts from GHG emissions. Implementation of **Mitigation Measure GHG-1** would require Valley Water's contractors to implement mobile source GHG emission reduction measures. However, it was uncertain at the time of Draft EIR preparation to what extent some of the off-road and on-road equipment and vehicles would be able to be used in remote areas where electricity supply and infrastructure for electric vehicles may not be readily available or practical.

Through implementation of **Mitigation Measure GHG-2,** Valley Water would use emissions credits to offset net GHG emissions from the Program Renewal that are not demonstrated to be reduced by Mitigation Measure GHG-1.

While the effectiveness of implementing Mitigation Measure GHG-1 was unknown at the time of Draft EIR preparation, Mitigation Measure GHG-2 requires Valley Water to purchase offsets for net emissions from Program Renewal activities not demonstrated to be reduced by Mitigation Measures GHG-1 or reduced by a future qualified GHGRP. Therefore, with the use of offsets, the impact of GHG emissions would meet the net zero threshold. As a result, impacts from GHG emissions after implementation of Mitigation Measures GHG-1 and GHG-2 are **less than significant with mitigation**.

Mitigation Measure GHG-1: GHG Emissions Reduction Practices for Maintenance Activities

Valley Water shall require the contractor to implement mobile source and other GHG emission reduction measures. All requirements shall be included in applicable bid documents, purchase orders, and constructs, with the contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and maintenance activities. The measures to include are as follows:

- Use zero-emission and hybrid-powered equipment to the greatest extent possible, provided adequate electricity supply and infrastructure is available in the planned work area. The performance criteria for meeting this standard are that at least two commercial rental facilities in the San Francisco Bay Area Air Basin are available, and that electricity and charging infrastructure be located near the planned work area.
- Require that all on-road heavy-duty trucks to meet the most stringent emissions standard as a condition of contract; this currently means that trucks need to be a 2015 model year (or newer).
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than two minutes. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Use CARB-approved renewable diesel fuel R99 or R100 in off-road construction equipment and on-road trucks.
- Use USEPA SmartWay certified trucks for deliveries and equipment transport.
- Require that all construction equipment be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be

checked by a certified mechanic in accordance with the manufacturer's specifications and determined to be running in proper condition prior to operation.

- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers, and offer meal options on site or shuttles to nearby meal destinations for construction employees.
- Recycle or salvage nonhazardous construction and demolition debris.
- Develop a plan to efficiently use water for adequate dust control because substantial amounts of energy can be consumed during the pumping of water.

Mitigation Measure GHG-2: GHG Emissions Mitigation Program

Valley Water will purchase emissions credits annually to offset GHG emissions increases from the Program Renewal. The total credits will be equal to the annual increase in emissions compared to the current SMP-2, which would be approximately 832 $MTCO_2e$ per year, reduced by any annual emissions reductions from implementing Mitigation Measure GHG-1 that can be demonstrated.

Valley Water will prioritize purchase of offsets that are not "otherwise required" (CEQA Guidelines Section 15126.4(c)(3)) using the following preference hierarchy: within the San Francisco Bay Area Air Basin, originating within California, and originating in other states with offset laws at least as strict as California's. However, all offset credits shall meet the following validation criteria as defined by 17 CCR 95802: the offset credits must be real, permanent, quantifiable, verifiable, enforceable, and additional. Offset protocols must also be consistent with CARB requirements under 17 CCR 95972. Offset credits shall be registered with a recognized and reputable carbon registry (e.g., Climate Action Reserve, the American Carbon Registry, or Verra).

Valley Water will maintain documentation of any GHG offsets, ensuring that the offsets are real, permanent, quantifiable verifiable, enforceable, and additional. If in the future Valley Water approves a qualified GHGRP consistent with CEQA Guidelines Section 15183.5(b) and the Program Renewal is demonstrated to be consistent with the GHGRP, then the annual requirements for offsets may be replaced by implementing applicable measures in the GHGRP.

Impact GHG-2: Conflict with an Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs (Less than Significant with Mitigation)

Implementation of the Program Renewal would result in GHG emissions as shown in Table 3.7-3. The overall goal of SB 32 and AB 1279 is to have a net decrease in GHG emissions, so the Program Renewal's increase in GHG emissions would be inconsistent this goal, which is a significant impact. Mitigation Measure GHG-1 would reduce Program Renewal GHG emissions, but the extent of this reduction is currently unknown. Mitigation Measure GHG-2 would include purchase of offsets as necessary to ensure a net zero increase in GHG emissions for the Program Renewal. Thus, the Program Renewal with mitigation would be consistent with the GHG reduction targets of SB 32 and AB 1279. Similarly, the Program Renewal with

mitigation would be consistent with California's 2022 Scoping Plan policies and goals, which are based on achieving SB 32 and AB 1279 emissions reduction targets. The Program Renewal will enhance several maintenance programs to assist with adaptation plans including vegetation management and downed tree management maintenance activities.

Various local general plans, climate action plans, and sustainability plans as discussed in Section 3.7.2 above and Appendix C contain goals and policies aimed at reducing GHG emissions and preparing for climate change impacts. Many of these policies encourage reduction of VMT from vehicles and use of alternative fueled and/or electric vehicles and equipment. Valley Water's alternative fueled vehicles currently consist of 15 percent hybrid vehicles and 2 percent electric vehicles compared to the total vehicle fleet and most of the hand tools are electric as well as some of the lawn maintenance equipment (Lewis, pers. comm., 2024). This indicates that Valley Water has made strides toward zero-emission vehicles (ZEVs) and equipment which are expected to increase in the future, so the Program Renewal would generally be consistent with local plans and policies for reducing GHG emissions. Note that a program or project is consistent with a local general plan if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment; consistency with each local policy is not required. (See, e.g., Friends of Lagoon Valley v. City of Vacaville, 154 Cal.App.4th 807 (2007)).

The Valley Water CCAP provides goals, strategies, and possible actions to reduce its GHG emissions and address the ways that Valley Water is vulnerable to climate change impacts in each of Valley Water's mission areas, including water supply, flood protection, and ecosystem stewardship (Valley Water 2021). The CCAP sets seven goals to guide Valley Water's response to climate change. The Program Renewal's maintenance activity consistency with applicable CCAP strategies is demonstrated in **Table 3.7-4**. As shown therein, Program Renewal maintenance activities would be consistent with, and not conflict with, the Valley Water CCAP.

Based on the above analysis, impacts related to conflicts with GHG emissions reduction plans would be less than significant with implementation of Mitigation Measures GHG-1 and GHG-2.

Table 3.7-4. Valley Water CCAP Strategies Consistency Analysis

Goals	Strategy No. and Description	Program Renewal Consistency
Goal 1: Reduce Direct GHG Emissions	1.1 Reduce GHG emissions Associated with the Valley Water fleet	Consistent. Maintenance equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and reduced idling time/equipment operation time. These actions would reduce GHG emissions from project construction equipment fleet.
	1.2 Reduce GHG emissions from trips between Valley Water offices and work sites.	Consistent. Program Renewal activities would utilize maintenance routes that minimize GHG emissions.
	1.3 Reduce GHG emissions associated with valley Water-owned equipment	Consistent. Valley Water already uses electric, hybrid, and alternatively fueled

Goals	Strategy No. and Description	Program Renewal Consistency
		equipment for Program activities and will continue to expand these under Mitigation Measure GHG-1.
	1.4 Minimize GHG emissions associated with planning, design, construction, operation, and maintenance of capital projects.	Consistent. Maintenance equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and reduced idling time/equipment operation time. These actions would reduce GHG emissions from the Program Renewal maintenance equipment fleet.
Goal 3: Reduce Indirect GHG Emissions	3.3 Create and expand other efforts to minimize indirect GHG emissions	Consistent. Valley Water's commitment to renewable energy sources minimizes indirect GHG emissions.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to reduce GHG emissions during maintenance activities, although to the exact extent cannot be quantified. Full descriptions of each BMP are provided in Chapter 2, *Project Description*.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of the work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of CO_2e emissions and therefore reduce the amount of GHG emissions.

- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that the release of CO_2e emissions are reduced and therefore GHG emissions are reduced.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that impacts to water quality and aquatic species emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

Conclusion

In conclusion, since the Program Renewal GHG emissions increases would conflict with the emissions reduction goals of SB 32, AB 1279, and the 2022 Scoping Plan, the impact is significant. Mitigation Measures GHG-1 and GHG-2 will reduce the amount of GHG emissions to a net zero increase with reductions in maintenance activity emissions and the use of offsets. Thus, the potential for conflicts with SB 32, AB 1279, and the 2022 Scoping Plan would be **less than significant with mitigation**.

Mitigation Measures: See Mitigation Measures **GHG-1** (**GHG Emissions Reduction Practices for Maintenance Activities)** and **GHG-2** (**GHG Emissions Mitigation Program)** above.

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3.8 Hazards and Hazardous Materials

3.8.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) related to hazards and hazardous materials. Program Renewal activities may involve the use of hazardous materials (such as those used for maintenance equipment), involve work within areas of existing contamination, or could have impacts related to other types of hazard issues such as mosquitoes, emergency response, and pesticide use. Data resources used in the preparation of this section included the State Water Resources Control Board's (SWRCB's) GeoTracker, and the California Department of Toxic Substances Control's (DTSC's) EnviroStor database. Impacts related to wildland fires are discussed in Section 3.15, "Wildfire."

3.8.2 Regulatory Setting

The following subsections discuss federal, state, and regional laws and regulations that pertain to hazards and hazardous materials for the Program Renewal. Applicable local plans, policies, regulations, or ordinances related to hazards and hazardous materials are included in Appendix C, *General Plan Policies and Ordinances*. In summary, Appendix C discusses several plans throughout Santa Clara County (County) and local jurisdictions that contain relevant programs, strategies, policies, and goals to manage hazardous materials safely and efficiently, and to plan for emergency access and evacuation in the event of a hazardous materials incident.

Federal Plans, Policies, Regulations, and Laws

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act) (42 U.S. Government Code [USC] Section 9601 et seq.) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, the U.S. Environmental Protection Agency (USEPA) has the authority to seek out the parties responsible for hazardous materials releases and to assure their cooperation in site remediation. CERCLA also provides federal funding (the "Superfund") for the remediation of hazardous materials contamination (USEPA 2024a). The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

USEPA has the authority to implement CERCLA in all 50 states and all U.S. territories, using a variety of enforcement tools. The identification, monitoring, and remediation of Superfund sites are usually coordinated by state environmental protection and/or waste management agencies.

When potentially responsible parties cannot be identified or located, or when responsible parties fail to act, USEPA has the authority to remediate abandoned and/or historical sites

where hazardous materials contamination is known to exist and to pose a human health hazard.

Pursuant to CERCLA, USEPA maintains National Priorities List of uncontrolled or abandoned hazardous waste sites identified for priority remediation under the Superfund program. Sites are identified for listing based on USEPA's hazard ranking system or if they meet certain other requirements.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 et seq.) was enacted in 1976 as an amendment to the Solid Waste Disposal Act to address the nationwide generation of municipal and industrial solid waste. RCRA gives USEPA the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste, including underground storage tanks storing hazardous substances. RCRA also establishes a framework for the management of nonhazardous wastes (USEPA 2024b). RCRA addresses only active and future facilities; it does not address abandoned or historical sites, which are covered by CERCLA (see preceding discussion).

RCRA was updated in 1984 by the passage of the federal Hazardous and Solid Waste Amendments (HSWA), which require the gradual phasing out of land disposal of wastes. HSWA also increased the USEPA's enforcement authority and established more stringent hazardous waste management standards, including a comprehensive underground storage tank program.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC 136 et seq.) was enacted in 1947. The purpose of FIFRA is to establish federal jurisdiction over the distribution, sale, and use of pesticides. Key provisions of FIFRA require pesticide applicators to pass a licensing examination for status as "qualified applicators," create a review and registration process for new pesticide products and provide thorough and understandable labeling that includes instructions for safe use.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). These standards, codified in 29 Code of Federal Regulations (CFR) Part 1910, address issues that range in scope from walking and working surfaces, to exit routes and emergency planning, to hazardous materials and personal protective equipment (PPE). They include exposure limits for a wide range of specific hazardous materials, as well as requirements that employers provide PPE to their employees wherever it is necessary (29 CFR Section 1910.132).

U.S. Department of Transportation Hazardous Materials Transportation Act

The U.S. Department of Transportation (U.S. DOT) Hazardous Materials Transportation Act (HMTA) (49 USC Chapter 51) was enacted in 1975 and regulates interstate transport of

hazardous materials and wastes. The HMTA specifies driver training requirements, load labeling procedures, and container design and safety requirements. Transporters of hazardous wastes must also meet the requirements of other statutes, such as the RCRA. The HMTA requires that carriers report accidental releases of hazardous materials to the U.S. DOT at soon as is practical. Incidents that must be reported include deaths, injuries requiring hospitalization, and property damage exceeding $50,000. The U.S. DOT, the Federal Highway Administration, and the Federal Railroad Administration are the agencies responsible for administering the Hazardous Materials Transportation Act. This law may apply to the transportation of hazardous materials to or from the Program Renewal work sites if such materials are identified or required as part of construction or maintenance activities.

State Plans, Policies, Regulations, and Laws

California state regulations, which are equal to or more stringent than federal regulations, require those handling hazardous wastes to plan for and manage waste with proper handling, storage, and disposal, so that risks to human health and the environment will be reduced.

Hazardous Waste Control Act of 1972

The Hazardous Waste Control Act of 1972 created the state's Hazardous Waste Management Program, which is similar to but more stringent than the federal program under RCRA. The Hazardous Waste Control Act is implemented at the state-level by regulations contained in Title 26 of the California Code of Regulations. Regulations in 26 Cal. Code of Regs. list more than 800 materials that may be hazardous and establish criteria for their identification, packaging, and disposal. Under the Hazardous Waste Control Act and 26 Cal. Code Regs., hazardous waste generators must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

California Department of Pesticide Regulation, Pesticides and Pest Control Operations

USEPA has delegated primary authority to the California Department of Pesticide Regulation (CDPR) to enforce federal and state laws pertaining to the proper and safe use of pesticides (CDPR 2024a). However, County Agricultural Commissioners (CACs) and their staffs are largely responsible for the in-field enforcement of CDPR's pesticide use regulations in California's 58 counties. Personnel from CDPR's headquarters and CDPR field staff provide training, coordination, technical, and legal support to the counties.

Title 3 – Food and Agriculture, Division 6, Pesticides and Pest Control Operations in the Cal. Code of Regs. describes the role of CDPR and provides guidance related to pesticide regulatory programs; pesticides (including pesticide registration and the identification and use of restricted materials); licensing, work requirements, and worker protections program; and environmental protection for groundwater, air quality, aquatic and marine environments, surface water, and compost (CDPR 2024b). CACs, on behalf of CDPR, are responsible for the in-field enforcement of these various human health and environmental protections from pesticides.

General NPDES Aquatic Pesticide Use Permit for Aquatic Weed Control

The SWRCB has adopted a general National Pollutant Discharge Elimination System (NPDES) permit (Water Quality Order No. 2013-002-DWQ, General Permit No. CAG990005) for the regulation of aquatic pesticides to control aquatic weeds in waters of the United States (SWRCB 2016). This General NPDES permit currently only authorizes the discharge of the following aquatic pesticides: 2,4-D, acrolein, calcium hypochlorite, copper, diquat, endothall, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, sodium carbonate peroxyhydrate, sodium hypochlorite, triclopyr-based aquatic algaecides and aquatic herbicides, and adjuvants containing ingredients using the surrogate nonlyphenol. Aquatic pesticides that are applied to waters of the United States in accordance with FIFRA label requirements are not considered pollutants. However, pesticides or by-products that persist in or leave the treatment area after a specified treatment period are considered pollutants and require coverage under this General Permit.

To obtain coverage under the General NPDES permit, a discharger must comply with all of the monitoring, reporting, and other restrictions detailed in the permit. First, an applicant must submit a Notice of Intent, a vicinity map, and an annual fee to the applicable Regional Water Quality Control Board (RWQCB) to apply for coverage under the permit. An applicant must comply with the specific monitoring requirements identified in the permit and must submit annual reports (at the least) to the applicable RWQCB. The General NPDES permit for weed control requires that dischargers comply with effluent limitations, including developing and implementing an Aquatic Pesticide Application Plan (APAP), and complying with applicable receiving water limitations (SWRCB 2016). Valley Water developed an APAP in 2013 that guides Valley Water's use of algaecides and aquatic herbicides in accordance with the General NPDES permit and updated this APAP in 2022 (Valley Water 2022). A discharger covered by the permit must follow all pesticide label instructions and any terms contained in Use Permits issued by CACs. In addition, applicators of a pesticide designated as a restricted material must either be licensed by CDPR or must work under the supervision of a licensed professional (SWRCB 2016). All aquatic pesticides applied by Valley Water under the General NPDES permit are done so in accordance with the permit requirements.

California Emergency Services Act

Under the Emergency Services Act of 2015, the State of California developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services (Cal OES). This office coordinates the responses of other agencies, including USEPA, the California Highway Patrol (CHP), the nine RWQCBs, the various air quality management districts, and county disaster response offices.

California Occupational Safety and Health Administration Standards

Title 8 of the California Occupational Safety and Health Administration (Cal/OSHA) regulations specifies that workers who may be exposed to contaminated soils and vapors, or possibly contaminated groundwater, be subject to monitoring and personal safety equipment requirements that specifically address airborne contaminants. Workers who are in direct contact with contaminated soil or groundwater are required to perform all activities in

accordance with a site-specific health and safety plan, as outlined in the Cal/OSHA standards. The primary intent of the Title 8 requirements is to protect worker health.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

The California Air Resources Board (CARB) has established the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations to minimize the generation of asbestos from earth disturbance or construction activities (17 Cal. Code Regs. Section 93105). The Asbestos ATCM applies to any project that would include sites to be disturbed in a geographic ultramafic rock unit area, or an area where naturally occurring asbestos (NOA), serpentine, or ultramafic rocks are determined to be present. Under the ATCM, prior to any grading activities at a development site, a geologic analysis is required to determine if serpentine rock is present. If NOA is found at a development site, preparation of an Asbestos Health and Safety Program and an Asbestos Dust Mitigation Plan are required. These plans require approval by the Bay Area Air District before construction begins.

Cortese List Government Code Section 65962.5

California Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop, at least annually, an updated Cortese List (CalEPA 2024). The California DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies, including the SWRCB and the California Integrated Waste Management Board, are required to provide additional hazardous material release information for the Cortese List.

California Environmental Protection Agency

CalEPA is responsible for creating and enforcing environmental regulations within California. The DTSC is housed within CalEPA and was formed under the Hazardous Waste Control Act. The DTSC is responsible for regulating hazardous waste, remediating existing contamination, and identifying ways to reduce production of hazardous wastes. The DTSC can delegate enforcement responsibilities to local jurisdictions.

California Environmental Protection Agency Unified Program

CalEPA oversees California's Unified Program which protects Californians from hazardous waste and hazardous materials by ensuring that local regulatory agencies apply statewide standards when permits are issued and conduct inspections and enforcement activities. Specifically, the Unified Program consolidates the administration, permit, inspection, and enforcement activities of the following environmental and emergency management programs: Aboveground Petroleum Storage Act (APSA) Program, Area Plans for Hazardous Materials Emergencies, California Accidental Release Prevention (CalARP) Program, Hazardous Materials Business Plan (HMBP) Program, Hazardous Material Management Plan (HMMP) and Hazardous Material Inventory Statements (HMIS), Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs, and Underground Storage Tank Program.

Motor Vehicle Code

In addition to the RCRA hazardous waste transportation standards, California regulates the transportation of hazardous waste originating or passing through the state. State regulations are contained in the Cal. Code Regs., Title 13, Vehicle Code. Hazardous waste must be regularly removed from generating sites by licensed hazardous waste transporters. Transported materials must be accompanied by hazardous waste manifests. The CHP and the California Department of Transportation (Caltrans) are responsible for enforcing federal and state regulations pertaining to the transport of hazardous materials through California. The CHP enforces materials and hazardous waste labeling and packaging regulations that prevent leakage and spills of material in transit and provides information to cleanup crews in the event of an incident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP. The CHP conducts regular inspections of licensed transporters to assure regulatory compliance. The CHP and Caltrans also respond to hazardous materials transportation emergencies. Caltrans has emergency chemical spill identification teams at locations throughout the state.

California Valley Fever Regulations

Regulations covering Valley Fever are promulgated in Cal. Code Regs., Title 8 Regulations, in the sections summarized below.

- Section 3203, Injury and Illness Prevention: This section requires employers to establish and implement a written Injury and Illness Prevention Program (IIPP) that shall identify the person or persons with authority and responsibility for implementing the IIPP, establish a system for ensuring that employees are trained to recognize and comply with safe and healthy work practices, and establish a system for communicating with employees in a form readily understandable by all affected employees on matters relating to occupational safety and health.
- Section 5141, Control of Harmful Exposures: This section requires that harmful exposures shall be prevented by engineering controls whenever feasible. Whenever engineering controls are not feasible or do not achieve full compliance, administrative controls shall be implemented if practicable. Control by respiratory protective equipment shall be used to prevent harmful exposures (1) during the time period necessary to install or implement feasible engineering controls, and (2) where feasible engineering controls and administrative controls fail to achieve full compliance; and (3) in emergencies.
- Section 5144, Respiratory Protection: This section establishes the permissible practice for the use of respiratory protection: "(1) In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures. When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to this section. (2) Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee."

San Francisco Bay Regional Water Quality Control Board

In 2000, the San Francisco Bay RWQCB first published human health risk-based screening levels (RSLs) for over 100 commonly detected contaminants at sites with impacted soil and groundwater. The RSLs were revised in 2003 to become environmental screening levels (ESLs) and their scope broadened to include direct exposure screening levels for construction and trench workers and ecological risk and nuisance/gross contamination concerns (SWRCB 2024a). The ESLs are conservative risk-based screening levels initially informed by USEPA Region 9 Preliminary Remediation Goals and CalEPA California Human Health Screening Levels. Although initially developed to regulate water quality for the San Francisco Bay Basin Water Quality Control Plan, the conservative, risk-based ESLs have been adopted by many California regulatory agencies as default screening levels to evaluate risk to human health and the environment.

Healthy School Act of 2000 (California Education Code, Sections 17608-17613)

The Healthy School Act of 2000 restricts the use of certain pesticides at school sites and requires noticing for application of approved pesticides at schools. Under Section 17610 of the California Education Code, the use of a pesticide on a school site is prohibited if that pesticide is granted a conditional registration, an interim registration, or an experimental use permit by CDPR, or if the pesticide is subject to an experimental registration issued by USEPA, and (a) the pesticide contains a new active ingredient or (b) the pesticide is for new use. The use of a pesticide on a school site is prohibited if CDPR cancels or suspends registration, or requires phase-out of use, of that pesticide.

Under Section 17611 of the California Education Code, each school site must keep records of all pesticide use at the school site for a period of 4 years and make such information available to the public. Under Section 17612, the school designee must annually provide to all staff and parents/guardians of pupils written notification of the names of all pesticide products (as well as product active ingredients) that are expected to be applied at the school site in the upcoming year. The school designee must post a warning sign in each area of the school site where pesticides are to be applied, displaying the pesticide product's name, manufacturer's name, USEPA's product registration number, intended date and areas of application, and reason for the pesticide applications.

Regional and Local Plans, Policies, Regulations, and Laws

Bay Area Air District

As described in Section 3.3, "Air Quality," the Bay Area Air District regulates air quality in the San Francisco Bay Area Basin (SFBAAB), including the County. Thus, projects located within the SFBAAB are subject to Bay Area Air District's rules and regulations. Specific rules applicable to the Program Renewal includes the Bay Area Air District administration of 17 Cal. Code Regs. Section 93105: Asbestos ATCM for Construction, Grading, Quarrying and

Surface Mining Operations. According to the Bay Area Air District Asbestos ATCM Regulatory Advisory (BAAQMD[1] 2002):

> The ATCM applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally-occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Bay Area Air District or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally-occurring asbestos on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

If the ATCM is found to apply, then (BAAQMD 2002):

> Construction projects that will disturb one acre or less are required to implement several actions to minimize the emission of dust such as vehicle speed limitations, application of water prior to and during the ground disturbance, keeping storage piles wet and covered, and track-out prevention and removal. Activities must not result in emissions that are visible crossing the property line.

Exemptions may be granted (BAAQMD 2002):

(1) if a geological evaluation demonstrates that ultramafic rock or serpentine is not likely to be found;

(2) for road construction and maintenance activities in a remote location; or

(3) for the processing of rock from an alluvial deposit.

3.8.3 Environmental Setting

This section presents an overview of hazards in the Program Renewal Area, including: (1) the potential types and locations of existing hazardous materials sites in the County; (2) emergency response, transportation and evacuation routes, and related considerations for routing of Program Renewal vehicles; (3) other types of hazards that could affect or be affected by the Program Renewal, such as herbicide use, mosquito infestation, naturally occurring asbestos, and Valley Fever; and (4) nearby school facilities and airports and airstrips that may be affected by Program Renewal activities.

Existing Hazardous Materials Sites

Numerous hazardous materials are found throughout Santa Clara County. Hazardous materials may be generated from business and industrial industries, including automotive and transportation industries, which store and use petroleum fuels, chlorinated solvents, and paints for repairs; manufacturing industries that use solvents, paints, metals, compressed gases, and cleaning agents; and the agricultural industry, which uses pesticides and

[1] The Bay Area Air District was formerly named the Bay Area Air Quality Management District (BAAQMD); the rebranding occurred in 2025. The Bay Area Air District documents that were prepared prior to 2025 and referenced in this EIR will be cited as BAAQMD.

fertilizers. Hazardous materials may be found in soil and groundwater in areas associated with these past land uses.

A database search was conducted of all data sources in the "Cortese List" (enumerated in Government Code Section 65962.5). These sources include the GeoTracker database, a groundwater information management system that is maintained by SWRCB; the EnviroStor database or the Hazardous Waste and Substances Site List maintained by the DTSC; and the USEPA Superfund Site database (SWRCB 2024b, DTSC 2024a, USEPA 2024c). According to the GeoTracker database, 3,660 known sites located in Santa Clara County have been contaminated with hazardous waste. Of these, 3,062 sites have been remediated and are considered closed; 502 sites are still open (i.e., active) (SWRCB 2024b). Within 1,500 feet of a Program Renewal channel, three sites are still active (refer to **Table 3.8-1**). According to the EnviroStor database, 967 known sites located in Santa Clara County have been contaminated with hazardous waste. Of these, 159 sites have been remediated and are considered closed and 48 remain open (DTSC 2024). Within 1,500 feet of a Program Renewal channel, 45 sites are still considered active (refer to Table 3.8-1). According to the EPA Superfund database, there are 23 superfund sites located in Santa Clara County. Of these, 10 have been cleaned up and 13 sites are still undergoing cleanup (USEPA 2024c). As shown in Table 3.8-1, a total of 563 hazardous materials sites are active within Santa Clara County. **Figure 3.8-1** shows the location of documented open hazardous materials clean-up sites within 1,500 feet of a channel that could need maintenance under the Program Renewal. Remediated sites could contribute to legacy sources of contamination at Program Renewal maintenance reaches; similarly, active sites have the potential to result in active sources of contamination at maintenance locations.

Underground storage tanks are common throughout the County. They are most often used for the storage of gasoline and diesel fuels, while also used for the storage of new and used motor oil, solvents, and chemicals. Leaking underground fuel tanks (LUFTs), mainly those containing petroleum, are the leading cause of soil and groundwater contamination in the County. LUFTs primarily occur in the urbanized areas of the County. Contaminated sites are tracked in SWRCB's GeoTracker database. According to the GeoTracker database, 44 open LUFT sites are in Santa Clara County (SWRCB 2024b). A total of 2,598 closed or remediated LUFT sites exist in Santa Clara County (SWRCB 2024b). LUFTs have the potential to cause contamination at Program Renewal maintenance locations.

In addition, portions of the Guadalupe River watershed within the Program Renewal Area are affected by historic mercury mining activities. Soil and groundwater in some areas of this watershed contain hazardous levels of mercury contamination (SWRCB 2024c). Refer to Section 3.14, "Water Quality," for more information on mercury concentrations and management actions in the Guadalupe River watershed.

Table 3.8-1. Active Hazardous Materials Sites within 1,500 Feet of Program Renewal Channels

Project Name	Address	City	Past Land Uses and Contamination
Moldaw Residences	899 East Charleston Road	Palo Alto	None specified
Moyer Chemical	1300,1310, 1336 Old Bayshore Highway	San Jose	Manufacturing, pesticides
Cupertino Village Cleaners	10989 North Wolfe Road	Cupertino	Dry cleaning
Chestnut Street	725 Chestnut Street	San Jose	Distributor, vehicle maintenance, transportation warehousing
Watson Park	Jackson Street	San Jose	Landfill
1601 S. California Avenue	1601 California Avenue	Palo Alto	Manufacturing, metal plating
Delia's Cleaners	7335 Bolinger Road	Cupertino	Dry cleaning
AJ Commercial Laundry/All Chem Supply	1173-1175 Campbell Avenue	San Jose	Laundry services
Vista Montana Park	4145 N. 1st Street	San Jose	Agricultural orchard, pesticides
South Bay Asbestos Area	Liberty Street and Guadalupe River	San Jose	Landfill
FMC	1125 Coleman Avenue	San Jose	Degreasing facility, vehicle storage and refueling, hazardous waste storage, manufacturing
Hammon Plating Corporation	890 Commercial Street	Palo Alto	Metal plating
Mora Drive	2221-2291 Mora Drive	Mountain View	Manufacturing
Lorentz Barrel and Drum Company	1507 South 10th Street	San Jose	Recycling
Former Serra Silicon Valley Corporation	1875 Dobbin Drive	San Jose	Manufacturing, metal plating
Pinehurst Community Garden	Between Lynn Avenue, Blossom Valley Drive, and Pinehurst Avenue	Los Gatos	None specified
Agnews East	3500 Zanker Road	San Jose	Aboveground storage tanks, underground storage tanks, agriculture, vehicle maintenance
The Montecito Vista Project	2745 Monterey Road	San Jose	Junkyard
Fluff Dry Cleaning	801-819 West El Camino Real	Mountain View	Dry cleaning
Swiss Cleaners	14540 Camden Avenue	San Jose	Dry cleaning

Project Name	Address	City	Past Land Uses and Contamination
Palo Alto Town & Country Village	855 El Camino Real	Palo Alto	Dry cleaning
Skylark San Jose	2482 Almaden Road	San Jose	Dry cleaning
Former Frito Lay Facility	650 North King Road	San Jose	Agriculture, manufacturing
954 Villa Street	954 Villa Street	Mountain View	Dry cleaning
HC 1849 Fortune LLC	1849 Fortune Drive	San Jose	None specified
Du-All Anodizing Corporation	730 Chestnut Street	San Jose	None specified
Italix Company, Inc.	120 Mast Street	Morgan Hill	None specified
Clearwater Environmental Management, Alviso Independent Oil	5002 Archer Street	Alviso	Hazardous waste storage
New Laurelwood Elementary School	1095 & 1055 Dunford Way, 1380 Rosalia Avenue	Sunnyvale	None specified
Ultra Chem/Scott Enterprises	1310 Old Bayshore Boulevard	San Jose	Distribution, manufacturing, pesticides, vehicle maintenance, industrial waste treatment facility
Target Masters West	122 Minnis Circle	Milpitas	Firing range
Compugraphics USA, Inc.	821 San Antonio Road	Palo Alto	None specified
2330 Monroe Street Affordable Housing Project	2330 Monroe Street	Santa Clara	Agriculture, orchard, and row crops
STION Corporation	6321 San Ignacio Avenue	San Jose	None specified
Los Altos High School Expansion	201 Almond Avenue	Los Altos	Agriculture, underground storage tanks
Safety Kleen San Jose	1147 Tenth Street	San Jose	Hazardous waste storage
Mountain View High School Expansion	3535 Truman Avenue and 1305 Bryant Avenue	Mountain View	Agriculture, orchard
Proposed San Antonio Elementary School	435 San Antonio Road; 2535 California Street; 350, 506, 510-520 Showers Drive	Mountain View	Agriculture, orchard, retail
Westwood Elementary School	435 Saratoga Avenue	Santa Clara	None specified
Communications Hill New School	Corner of Lina Street and Communications Hill Boulevard	San Jose	Mine

Project Name	Address	City	Past Land Uses and Contamination
Saving Cleaners	1641 McKee Road	San Jose	Dry cleaning
Baypointe Redevelopment	210 Baypointe Parkway	San Jose	Agricultural orchard and row crops
Briarwood Elementary School	1930 Townsend Avenue	Santa Clara	None specified
Las Golondrinas	77 Kentucky Place	San Jose	Unknown
Former PARC 3333 Coyote Hill Road	3333 Coyote Hill Road	Palo Alto	Laboratories, research
San Jose/ Santa Clara Water Pollution Control Plant*	700 Los Esteros Road	San Jose	Diesel
Sunnyvale Water Pollution Control Plant*	1444 Borregas Avenue	Sunnyvale	None specified
Palto Alto Water Quality Control Plant*	2501 Embarcadero Way	Palo Alto	None specified

* SWRCB GeoTracker sites

Sources: DTSC 2024, SWRCB 2024b

Emergency Response, Evacuation, and Transportation Routes

Hazardous materials emergency response is the responsibility of the Santa Clara County Department of Environmental Health (DEH), which is the Certified Unified Program Agency (CUPA) for all areas in the County except the cities of Santa Clara, Gilroy, and Sunnyvale, which have their own CUPA that provides emergency response. Additionally, the Santa Clara County Fire Department, Mountain View Fire Department, and Palo Alto Fire Department assist and coordinate their activities with the Santa Clara County DEH (Unidocs 2018). These hazardous materials response teams are trained to respond to any level of hazardous materials incident in the County, including overturned tank trucks, fires involving hazardous materials and chemicals, incidents involving radioactive materials, downed electrical lines and ruptured natural gas lines, chlorine and toxic gas releases, fuel spills, and explosives and bombs. Valley Water coordinates with emergency response providers, as needed, during its routine maintenance activities. Furthermore, Valley Water has its own hazardous materials (HAZMAT) team that responds to numerous types of hazardous materials spills 24 hours a day, 7 days a week and will respond within two hours of the report (Valley Water 2024).

Although evacuation routes are not specifically identified in the Santa Clara County General Plan (1994), the Multijurisdictional Hazard Mitigation Plan (MJHMP) and the Safety Element of the General Plan are being updated concurrently and these updates will include an evacuation assessment (County of Santa Clara 2024). Additionally, the current MJHMP and Safety and Noise General Plan element establish policies and procedures to ensure the effective management of emergency operations and preparedness within Santa Clara County. In general, major arterials would serve as evacuation routes through the County and major highways providing regional access, such as U.S. 101, I-280, and SR-17, also would be used in the event of a large-scale evacuation.

Similarly, Valley Water transports its hazardous wastes through the County by truck, primarily along major arterials and highways, for disposal at treatment, storage, and disposal facilities in the County or other counties. County roads and city streets may be used to transport hazardous wastes from their sources to major highways. Haulers are required to use the most direct, safe route. The County of Santa Clara Emergency Operations Plan (EOP) identifies U.S. 101, I-880, I-680, and I-280 as the four major highways in the County that carry large quantities of hazardous materials. U.S. 101 and I-880 have the most truck traffic and are the most frequent location of hazardous materials spills (County of Santa Clara 2022).

Hazardous Waste Disposal Sites

Although Santa Clara County has some hazardous waste facilities that collect household hazardous waste, there are no certified hazardous waste disposal facilities located in the County. Thus, hazardous waste is disposed at hazardous waste facilities located outside of the County. Two hazardous waste disposal sites are located in California: the Kettleman Hills facility; and the Buttonwillow Landfill facility. The Kettleman Hills facility is located halfway between San Francisco and Los Angeles in Kings County and has a capacity of approximately 10.7 million cubic yards; however, it is only able to accept very small quantities of hazardous waste because it has nearly reached capacity. The landfill is currently seeking permits to continue to conduct hazardous waste landfill operations (DTSC 2024b; Waste Management, N.D.). The Buttonwillow Landfill facility, located west of Bakersfield, is a fully permitted hazardous waste facility that is permitted to receive, store, and treat a variety of hazardous and non-hazardous waste streams (Clean Harbors 2024). The permitted capacity of the

Buttonwillow landfill facility is 13,325,000 cubic yards and is estimated to reach capacity in 2040 (Clean Harbors 2024).

Both Kettleman Hills and Buttonwillow Landfill facilities are capable of treating, storing, and/or disposing solid, semi-solid, and liquid hazardous, extremely hazardous, and non-hazardous wastes (Waste Management 2024; Clean Harbors 2024).

Herbicide Use by Valley Water

One method Valley Water has used during implementation of the existing Stream Maintenance Program (SMP) to control vegetation along maintained channels has been the application of herbicides. Valley Water applies herbicides in accordance with the existing SMP Manual, and with federal and state regulations and permits. During 2014-2023, herbicides were applied to various creeks, channels, and other waterbodies throughout the County which are summarized in **Table 3.8-2**.

Table 3.8-2. 2014-2023 Herbicide Use Locations

Type of Waterbody	Name of Waterbody
River	Guadalupe River
Creek	Adobe, Alamitos, Barron, Berryessa, Calabazas, Calera, Calero, Canoas, Corrallitos, Coyote, Daves, Deer, East Little Llagas, Fisher, Flint, Golf, Greystone, Guadalupe, Hale, Heney, Lions, Llagas, Lone Hill, Los Coches, Los Gatos, Lower Penitencia, Lower Silver, Matadero, Miguelita, Mistletoe, North Babb, Norwood, Penitencia, Permanente, Piedmont, Prospect, Quimby, Randol, Regnart, Rodeo, Ross, Ruby, San Francisquito, San Tomas Aquino, Saratoga, Sierra, Smith, South Babb Stevens, Summerhill, Thompson, Tennant, Tularcitos, Upper Penitencia, Upper Silver, Uvas, West Branch Llagas, and West Little Llagas Creeks
Channel	Cochran, Junipero Serra, North Morey, Penitencia East, Permanente Diversion, South Morey, Stanford, Sunnyvale East, and Sunnyvale West Channels
Slough	Upper Miller Slough
Drain/Storm Drain	Princevalle Drain, El Camino Storm Drain

Table 3.8-3 summarizes the herbicides that would be applied under Program Renewal as well as the usage type, application frequency and method, and projected annual application amounts. Valley Water uses Category III and IV herbicides, which are the least toxic chemical herbicides designated by USEPA, with the exception of triclopyr-choline and paraffinic oil, which are Category II. In addition, all pesticide applicators are required to be licensed by the California Department of Pesticide Regulation or work under the supervision of someone who is licensed in accordance with Valley Water's Pesticide Policy.

Table 3.8-3. Summary of Herbicide and Adjuvant Types Proposed for Use under Program Renewal

Typical Application Location	Active Ingredient	Usage Type	Projected Annual Use	Application Frequency and Method
Upland Vegetation Upper maintenance roads and inboard or outboard levee slopes	Glyphosate	Post-emergent, cut-stump	600 gal/yr	1-2 times/year; target specific vegetation, spot spray, or cut-stump
	Triclopyr	Post-emergent, cut-stump	6 gal/yr	
	Aminopyralid + triclopyr	Post-emergent	300 gal/yr	
	Clopyralid	Post-emergent	4 gal/yr	
	Isoxaben	Pre-emergent	500 lb/yr	1 time/year; broadcast application to bare ground
	Dithiopyr	Pre-emergent	600 lb/yr	
	Aminopyralid	Pre-emergent and post-emergent	200 gal/yr	1-2 times/year; broadcast application for pre-emergent use; target specific vegetation or spot spray for post-emergent use
	Aminopyralid + Florpyrauxifen-benzyl	Post-emergent	200 gal/yr	1-2 times/year; target specific vegetation or spot spray
	Ethyl oleate	Non-ionic surfactant	100 gal/yr	Surfactant may be used in conjunction with application of other active ingredients
Aquatic Vegetation In channel, lower maintenance roads, access ramps, and terrace areas	Glyphosate	Post-emergent, cut-stump	500 gal/yr	1 time/ year; target specific vegetation/spot spray
	Imazapyr	Post-emergent	232 gal/yr	
	Imazamox	Post-emergent	100 gal/yr	
	Triclopyr-choline	Post-emergent	100 gal/yr	
	Ethyl oleate	Non-ionic surfactant	210 gal/yr	
	Paraffinic oil	Non-ionic surfactant	100 gal/yr	

Note: gal/yr = gallons per year

Mosquito Abatement

The Santa Clara County Vector Control District (SCCVCD) manages vector control in Santa Clara County. The SCCVCD manages vectors such as rats, mosquitoes, ticks, and fleas, to

control the spread of vector-borne diseases including malaria, West Nile virus, Lyme disease, and rabies (SCCVCD 2024a). The SCCVCD uses a variety of methods to control vectors, including stocking ponded areas with mosquito fish and screening irrigation drains.

Under the California Health and Safety Code, mosquito abatement districts are empowered to take all necessary and proper steps for the elimination and extermination of mosquitoes. SCCVCD routinely inspects potential mosquito breeding locations. If mosquito production is found, they take action to control or eliminate the problem (SCCVCD 2024b).

Naturally Occurring Asbestos

Asbestos is a naturally occurring fibrous mineral found in many parts of California, including Santa Clara County. When rocks containing these fibrous minerals are broken apart, asbestos fibers can become airborne and present a potential human health risk. Natural occurrences of asbestos are more likely to be encountered in, and immediately adjacent to, areas of ultramafic rocks. Outcrops of ultramafic rock are present in Santa Clara County (U.S. Geological Survey 2011). As shown in Figure 3.8-1, ultramafic rock is present adjacent to many Program Renewal channels in the Coyote, Guadalupe, and Pajaro watersheds.

Valley Fever

Valley Fever, sometimes called "San Joaquin Valley fever" or "desert rheumatism," is an infection caused by soil dwelling fungus (Coccidioides) that, when inhaled can affect the lungs, causing respiratory symptoms including cough, fever, chest pain, and tiredness. Valley Fever can be contracted from being exposed to ground disturbing activities and may be common in soil types throughout the Program Renewal Area. Although there are no commercially available tests to detect this fungus in soil, Valley Fever cases have been reported in the County since 2001 and have increased tenfold over the past 23 years. In 2024, Santa Clara County reported 107 cases, an increase from the 12 cases reported in 2001 (California Department of Public Health 2024). As climate conditions continue to change with more persistent drought conditions and changes in precipitation patterns, it is anticipated that Valley Fever cases will continue to increase.

School Facilities

In Santa Clara County, 34 school districts and 405 schools provide educational services to over 246,450 students (ED Data 2023). Program activities may occur in close proximity to schools. A total of 222 schools are located within 0.25 mile of Program Renewal channels (refer to **Table 3.8-4**).

Airports and Airstrips

Airports in Santa Clara County include San Jose Mineta International Airport, Reid-Hillview County Airport, San Martin Airport, Moffett Federal Airfield, and the Palo Alto Airport. These airports are shown in Figure 3.8-1. Some Program Renewal channels are located within airport safety zones defined in the Airport Comprehensive Land Use Plan. For example, the Guadalupe River is located within the San Jose Mineta International Airport safety zone.

Table 3.8-4. School Facilities within 0.25 Mile of Program Renewal Channels

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Public School Facilities				
Ben Painter Elementary	500 Rough and Ready Road	San Jose	163	0.03
Leland High	6677 Camden Avenue	San Jose	215	0.04
Horace Cureton Elementary	3720 East Hills Drive	San Jose	215	0.04
Sutter Elementary	3200 Forbes Avenue	Santa Clara	233	0.04
Empire Gardens Elementary	1060 East Empire Street	San Jose	240	0.05
Escuela Popular Accelerated Family Learning	149 North White Road	San Jose	265	0.05
Barron Park Elementary	800 Barron Avenue	Palo Alto	267	0.05
Mt. Pleasant Elementary	14275 Candler Drive	San Jose	277	0.05
Daves Avenue Elementary	17770 Daves Avenue	Los Gatos	284	0.05
Rocketship Academy Brilliant Minds	2960 Story Road	San Jose	296	0.06
Toyon Elementary	995 Bard Street	San Jose	302	0.06
Milpitas High	1285 Escuela Parkway	Milpitas	303	0.06
Millard McCollam Elementary	3311 Lucian Avenue	San Jose	311	0.06
Tom Matsumoto Elementary	4121 Mackin Woods Lane	San Jose	318	0.06
Chaboya Middle	3276 Cortona Drive	San Jose	320	0.06
Berryessa Union Elementary	1376 Piedmont Road	San Jose	326	0.06
Blue Hills Elementary	12300 De Sanka Avenue	Saratoga	327	0.06
Escondido Elementary	890 Escondido Road	Stanford	332	0.06
Springer Elementary	1120 Rose Avenue	Mountain View	336	0.06
Crittenden Middle	1701 Rock Street	Mountain View	342	0.06
ACE Inspire Academy	1155 East Julian Street	San Jose	350	0.07
Curtner Elementary	275 Redwood	Milpitas	350	0.07
Prospect High	18900 Prospect Road	Saratoga	354	0.07

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Paradise Valley Engineering Academy	1400 La Crosse Drive	Morgan Hill	356	0.07
Georgina P. Blach Junior High	1120 Covington Road	Los Altos	357	0.07
William Sheppard Middle	480 Rough and Ready Road	San Jose	363	0.07
Millbrook Elementary	3200 Millbrook Drive	San Jose	365	0.07
Rachel Carson Elementary	4245 Meg Drive	San Jose	367	0.07
Majestic Way Elementary	1855 Majestic Way	San Jose	374	0.07
San Jose High	275 North 24th Street	San Jose	377	0.07
ACE Charter High	1776 Educational Park Drive	San Jose	392	0.07
Mariano Castro Elementary	505 Escuela Avenue	Mountain View	396	0.07
Sierramont Middle	3155 Kimlee Drive	San Jose	398	0.08
El Carmelo Elementary	3024 Bryant Street	Palo Alto	405	0.08
Mabel Mattos Elementary	1750 McCandless Drive	Milpitas	414	0.08
Rocketship Si Se Puede Academy	2249 Dobern Avenue	San Jose	417	0.08
ACE Esperanza Middle	1665 Santee Drive	San Jose	430	0.08
Bret Harte Middle	7050 Bret Harte Drive	San Jose	433	0.08
Herbert Hoover Elementary	445 East Charleston Road	Palo Alto	434	0.08
Dwight D. Eisenhower Elementary	277 Rodonovan Drive	Santa Clara	451	0.09
Ramblewood Elementary	1351 Lightland Road	San Jose	457	0.09
C. B. Eaton Elementary	20220 Suisun Drive	Cupertino	458	0.09
Silver Oak Elementary	5000 Farnsworth Drive	San Jose	460	0.09
Adrian Wilcox High	3250 Monroe Street	Santa Clara	466	0.09
Central Park Elementary	2720 Sonoma Place	Santa Clara	474	0.09
Selma Olinder Elementary	890 East William	San Jose	481	0.09
Carolyn A. Clark Elementary	3701 Rue Mirassou Drive	San Jose	486	0.09
Laurelwood Elementary	4280 Partridge Drive	San Jose	504	0.10
Sunrise Middle	1149 East Julian Street	San Jose	505	0.10

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Castillero Middle	6384 Leyland Park Drive	San Jose	506	0.10
Union Middle	2130 Los Gatos-Almaden Road	San Jose	518	0.10
Renaissance at Mathson	2050 Kammerer Avenue	San Jose	521	0.10
Lee Mathson Middle	2050 Kammerer Avenue	San Jose	521	0.10
Shirakawa (George, Sr.) Elementary	665 Wool Creek Drive	San Jose	523	0.10
Palo Verde Elementary	3450 Louis Road	Palo Alto	531	0.10
Gabriela Mistral Elementary	505 Escuela Avenue	Mountain View	536	0.10
West Valley Elementary	1635 Belleville Way	Sunnyvale	565	0.11
Westmont High	4805 Westmont Avenue	Campbell	569	0.11
Christopher High	850 Day Road	Gilroy	571	0.11
Forest Hill Elementary	4450 McCoy Avenue	San Jose	579	0.11
Adelante Dual Language Academy	2999 Ridgemont Drive	San Jose	585	0.11
Edith Landels Elementary	115 West Dana Street	Mountain View	599	0.11
Stonegate Elementary	2605 Gassmann Drive	San Jose	602	0.11
Juan Cabrillo Middle	2550 Cabrillo Avenue	Santa Clara	605	0.11
Robert Randall Elementary	1300 Edsel Drive	Milpitas	614	0.12
Northwood Elementary	2760 East Trimble Road	San Jose	619	0.12
Piedmont Hills High	1377 Piedmont Road	San Jose	626	0.12
Latino College Preparatory Academy	14271 Story Road	San Jose	627	0.12
Ida Jew Academies	1966 Flint Avenue	San Jose	627	0.12
Santa Teresa High	6150 Snell Road	San Jose	630	0.12
Ruskin Elementary	1401 Turlock Lane	San Jose	630	0.12
Henry M. Gunn High	780 Arastradero Road	Palo Alto	632	0.12
Valle Vista Elementary	2400 Flint Avenue	San Jose	638	0.12
Pomeroy Elementary	1250 Pomeroy Avenue	Santa Clara	650	0.12
Murdock-Portal Elementary	1188 Wunderlich Drive	San Jose	672	0.13

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Leigh High	5210 Leigh Avenue	San Jose	673	0.13
Calaveras Hills	1331 East Calaveras Boulevard	Milpitas	674	0.13
Blossom Hill Elementary	16400 Blossom Hill Road	Los Gatos	696	0.13
Lynhaven Elementary	881 South Cypress Avenue	San Jose	700	0.13
Ocala Middle	2800 Ocala Avenue	San Jose	705	0.13
KIPP San Jose Collegiate	1790 Educational Park Drive	San Jose	711	0.13
Redwood Middle	13925 Fruitvale Avenue	Saratoga	724	0.14
Graystone Elementary	6982 Shearwater Drive	San Jose	728	0.14
Alta Vista Elementary	200 Blossom Valley Road	Los Gatos	729	0.14
San Martin Gwinn Environmental Science Academy	13745 Llagas Avenue	San Jose	734	0.14
Evergreen Elementary	3010 Fowler Road	San Jose	736	0.14
Braly Elementary	675 Gail Avenue	Sunnyvale	740	0.14
Rocketship Discovery Prep	370 Wooster Street	San Jose	745	0.14
Bowers Elementary	2755 Barkley Avenue	Santa Clara	746	0.14
Solorsano Middle	7121 Grenache Way	Gilroy	781	0.15
Summerdale Elementary	1100 Summerdale Drive	San Jose	781	0.15
Marshall Lane Elementary	14114 Marilyn Lane	Saratoga	786	0.15
Saratoga Elementary	14592 Oak Street	Saratoga	790	0.15
Anne Darling Elementary	333 North 33rd Street	San Jose	791	0.15
Luis Valdez Leadership Academy	1855 Lucretia Avenue	San Jose	795	0.15
College Connection Academy	1855 Lucretia Avenue	San Jose	795	0.15
Williams Elementary	1150 Rajkovich Way	San Jose	810	0.15
Phoenix High	6150 Snell Road	San Jose	817	0.15
Lewis H. Britton Middle	80 West Central Avenue	Morgan Hill	822	0.16
Rod Kelley Elementary	8755 Kern Avenue	Gilroy	824	0.16
Joseph George Middle	277 Mahoney Drive	San Jose	825	0.16

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Reed Elementary	1524 Jacob Avenue	San Jose	827	0.16
Norwood Creek Elementary	3241 Remington Way	San Jose	828	0.16
Boynton High	901 Boynton Avenue	San Jose	831	0.16
Rocketship Mateo Sheedy Elementary	788 Locust Street	San Jose	836	0.16
Laurelwood Elementary	955 Teal Drive	Santa Clara	838	0.16
Blackford Elementary	1970 Willow Street	San Jose	849	0.16
Cedar Grove Elementary	2702 Sugar Plum Drive	San Jose	851	0.16
Stevens Creek Elementary	10300 Ainsworth Drive	Cupertino	859	0.16
Ellen Fletcher Middle	655 Arastradero Road	Palo Alto	859	0.16
William Regnart Elementary	1170 Yorkshire Drive	Cupertino	861	0.16
Lyndale Elementary	13901 Nordyke Drive	San Jose	872	0.17
Gilroy High	750 West Tenth Street	Gilroy	875	0.17
Holly Oak Elementary	2995 Rossmore Way	San Jose	876	0.17
Canoas Elementary	880 Wren Drive	San Jose	877	0.17
Cupertino High	10100 Finch Avenue	Cupertino	885	0.17
Opportunity Youth Academy	1290 Ridder Park Drive	Milpitas	889	0.17
San Miguel Elementary	777 San Miguel Avenue	Sunnyvale	895	0.17
Central High (Continuation)	85 Tilton Avenue	Morgan Hill	906	0.17
South Valley Middle	385 IOOF Avenue	Gilroy	909	0.17
Charter School of Morgan Hill	9530 Monterey Road	Morgan Hill	916	0.17
Santa Clara County Special Education	1290 Ridder Park Drive, MC273	San Jose	916	0.17
Santa Clara County Community	1290 Ridder Park Drive, MC213	San Jose	916	0.17
Eliot Elementary	475 Old Gilroy Street	Gilroy	918	0.17
Ernesto Galarza Elementary	1610 Bird Avenue	San Jose	925	0.18
Briarwood Elementary	1930 Townsend Avenue	Santa Clara	929	0.18
Mt. Madonna High	8750 Hirasaki Court	Gilroy	932	0.18

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Yerba Buena High	1855 Lucretia Avenue	San Jose	935	0.18
Noddin Elementary	1755 Gilda Way	San Jose	952	0.18
Independence High	1776 Educational Park Drive	San Jose	957	0.18
Louis E. Stocklmeir Elementary	592 Dunholme Way	Sunnyvale	976	0.18
Thomas P. Ryan Elementary	1241 McGinness Avenue	San Jose	984	0.19
Gilroy Prep (a Navigator School)	277 IOOF Avenue	Gilroy	987	0.19
P. A. Walsh STEAM Academy	353 West Main Avenue	Morgan Hill	993	0.19
Saratoga High	20300 Herriman Avenue	Saratoga	994	0.19
River Glen	1088 Broadway	San Jose	998	0.19
Isaac Newton Graham Middle	1175 Castro Street	Mountain View	1,008	0.19
Homestead High	21370 Homestead Road	Cupertino	1,009	0.19
Sakamoto Elementary	6280 Shadelands Drive	San Jose	1,016	0.19
R. I. Meyerholz Elementary	6990 Melvin Drive	San Jose	1,026	0.19
Barrett Elementary	895 Barrett Avenue	Morgan Hill	1,026	0.19
Thomas Russell Middle	1500 Escuela Parkway	Milpitas	1,028	0.19
Alta Vista High	1325 Bryant Avenue	Mountain View	1,035	0.20
Voices College-Bound Language Academy – Morgan Hill	610 Jarvis Drive	Morgan Hill	1,044	0.20
Fairwood Elementary	1110 Fairwood Avenue	Sunnyvale	1,044	0.20
Pegasus High	1776 Educational Park Drive	San Jose	1,075	0.20
Piedmont Middle	955 Piedmont Road	San Jose	1,078	0.20
August Boeger Middle	1944 Flint Avenue	San Jose	1,080	0.20
Aptitud Community Academy at Goss	2475 Van Winkle Lane	San Jose	1,097	0.21
Garden Gate Elementary	10500 Ann Arbor Avenue	Cupertino	1,099	0.21
Morrill Middle	1970 Morrill Avenue	San Jose	1,113	0.21
Don Callejon	4176 Lick Mill Boulevard	Santa Clara	1,117	0.21

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Alexander Rose Elementary	250 Roswell Drive	Milpitas	1,128	0.21
James Franklin Smith Elementary	2220 Woodbury Lane	San Jose	1,140	0.22
Marian A. Peterson Middle	1380 Rosalia Avenue	Sunnyvale	1,182	0.22
Dove Hill Elementary	1460 Colt Way	San Jose	1,184	0.22
Anthony Spangler Elementary	140 North Abbott	Milpitas	1,192	0.23
Las Animas Elementary	6550 Cimino Street	Gilroy	1,219	0.23
Evergreen Valley High	3300 Quimby Road	San Jose	1,240	0.23
Private School Facilities				
Crossroads Christian School	145 Wright Avenue	Morgan Hill	132	0.02
St. Francis High School	1885 Miramonte Avenue	Mountain View	165	0.03
Kehillah Jewish High School	3900 Fabian Way	Palo Alto	171	0.03
St. John the Baptist Catholic	360 South Abel Street	Milpitas	206	0.04
The King's Academy	562 North Britton Avenue	Sunnyvale	210	0.04
Monarch Christian Preschool & Kindergarten	1715 Calaveras Boulevard	Milpitas	220	0.04
Los Gatos Christian School	16845 Hicks Road	Los Gatos	230	0.04
Esther B. Clark School Palo Alto	650 Clark Way	Palo Alto	234	0.04
Sacred Heart School	13718 Saratoga Avenue	Saratoga	238	0.05
Merryhill School	1500 Yosemite Drive	Milpitas	245	0.05
Los Altos Christian Schools	625 Magdalena Avenue	Los Altos	269	0.05
Fusion Academy	50 University Avenue, Suite 300	Los Gatos	277	0.05
Hillbrook School	300 Marchmont Drive	Los Gatos	288	0.05
Saint Andrew's Episcopal School	13601 Saratoga Avenue	Saratoga	293	0.06
Silicon Valley International School	151 Laura Lane	Palo Alto	307	0.06
Pinewood Private–Upper Campus	26800 Fremont Road	Los Altos Hills	323	0.06
Monarch Christian Academy	136 Piedmont Road	Milpitas	356	0.07
Keys Family Day School	2850 Middlefield Road	Palo Alto	381	0.07

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Challenger - Harwood	4949 Harwood Road	San Jose	389	0.07
Holy Spirit	1198 Redmond Avenue	San Jose	392	0.07
Live Oak Academy	2497 Homestead Road	Santa Clara	395	0.07
AchieveKids	1212 McGinness Avenue	San Jose	403	0.08
Morgan Autism Center	950 St. Elizabeth Drive	San Jose	408	0.08
San Jose Christian School	1530 Oakland Road, Suite 100	San Jose	421	0.08
Challenger School – Middlefield	3880 Middlefield Road	Palo Alto	422	0.08
Yavneh Day School	14855 Oka Road, Suite 100	Los Gatos	468	0.09
St. Joseph Elementary – Mountain View	1120 Miramonte Avenue	Mountain View	524	0.10
Miramonte Christian Elementary	1175 Altamead Drive	Los Altos	552	0.10
East Valley Christian School	2715 S. White Road	San Jose	572	0.11
Archbishop Mitty High	5000 Mitty Way	San Jose	588	0.11
Rainbow Montessori	790 East Duane Avenue	Sunnyvale	601	0.11
Legacy Christian School	420 Allegan Circle	San Jose	606	0.11
Challenger School - Almaden	19950 McKean Road	San Jose	619	0.12
Apostles Lutheran	5828 Santa Teresa Boulevard	San Jose	634	0.12
Fusion Academy Palo Alto	2191 East Bayshore Road, Suite 100	Palo Alto	664	0.13
St. Justin	2655 Homestead Road	Santa Clara	699	0.13
Extreme Academy	7591 Edinburgh Way	Gilroy	712	0.13
The Girls' Middle School	3400 West Bayshore Road	Palo Alto	735	0.14
St. Mary, Gilroy	7900 Church Street	Gilroy	760	0.14
Stratford Middle School	1718 Andover Lane	San Jose	798	0.15
Keys Family Day School	3891 El Camino Real	Palo Alto	816	0.15
St. Victor School	3150 Sierra Road	San Jose	859	0.16
Our Lady of Grace	310 Edwards Avenue	San Jose	859	0.16
Canyon Heights Academy	775 Waldo Road	Campbell	892	0.17

School Name	Address	City	Distance to Nearest Channel (feet)	Distance to Nearest Channel (miles)
Cornerstone Learning Foundation	4243 Manuela Avenue	Palo Alto	917	0.17
Stratford School	410 Llagas Road	Morgan Hill	932	0.18
Beacon	5670 Camden Avenue	San Jose	941	0.18
St. Lucy Parish School	76 Kennedy Avenue	Campbell	966	0.18
Silicon Valley International School	3233 Cowper Street	Palo Alto	1,015	0.19
St. Thomas More	1565 South White Road	San Jose	1,053	0.20
Sacred Heart Nativity School	310 Edwards Avenue	San Jose	1,060	0.20
Bowman School	4000 Terman Drive	Palo Alto	1,062	0.20
Valley Christian Elementary	1450 Leigh Avenue	San Jose	1,068	0.20
St. Nicholas Elementary	12816 El Monte Road	Los Altos Hills	1,091	0.21
Almaden Country Day School	6835 Trinidad Drive	San Jose	1,103	0.21
St. Mary of the Immaculate Conception	30 Lyndon Avenue	Los Gatos	1,128	0.21
Oakwood	105 John Wilson Way	Morgan Hill	1,133	0.21
St. Catherine Elementary	17500 Peak Avenue	Morgan Hill	1,135	0.22
Happy Academy	1019 S De Anza Boulevard	San Jose	1,144	0.22
Stratford School	341 Great Mall Parkway	Milpitas	1,151	0.22
Stellar Learning Academy	2503 Easton Place #38	San Jose	1,177	0.22
Santa Clara Christian	3421 Monroe Street	Santa Clara	1,184	0.22
Mulberry School	220 Belgatos Road	Los Gatos	1,237	0.23

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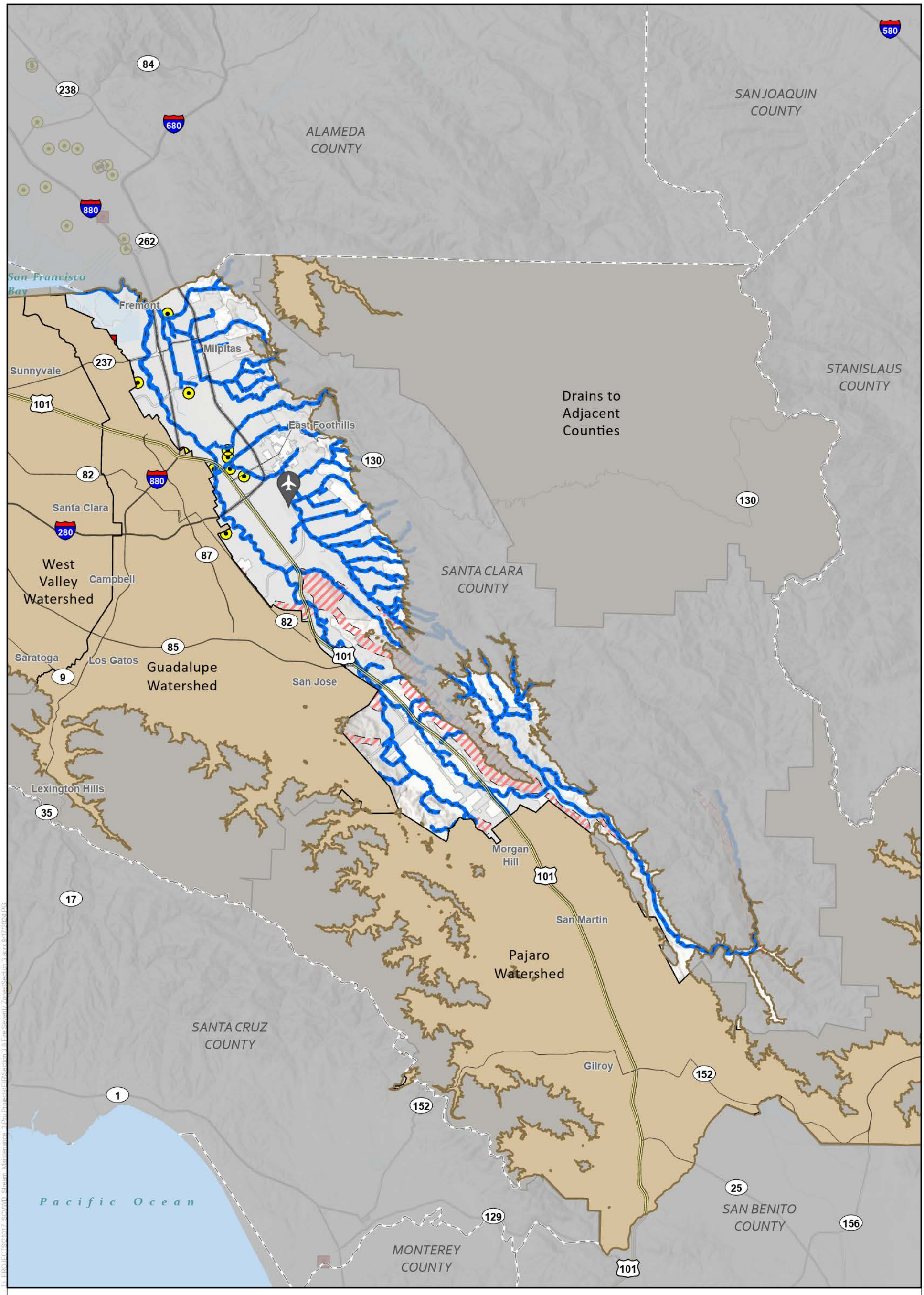

Figure 3.8-1
Hazardous Material Sites and Naturally Occurring Asbestos
Coyote Watershed

Source: State of California GIS Services, https://services.gis.ca.gov/arcgis/rest/services; Santa Clara County GIS Services, https://mapservices.sccgov.org/arcgis/rest/services

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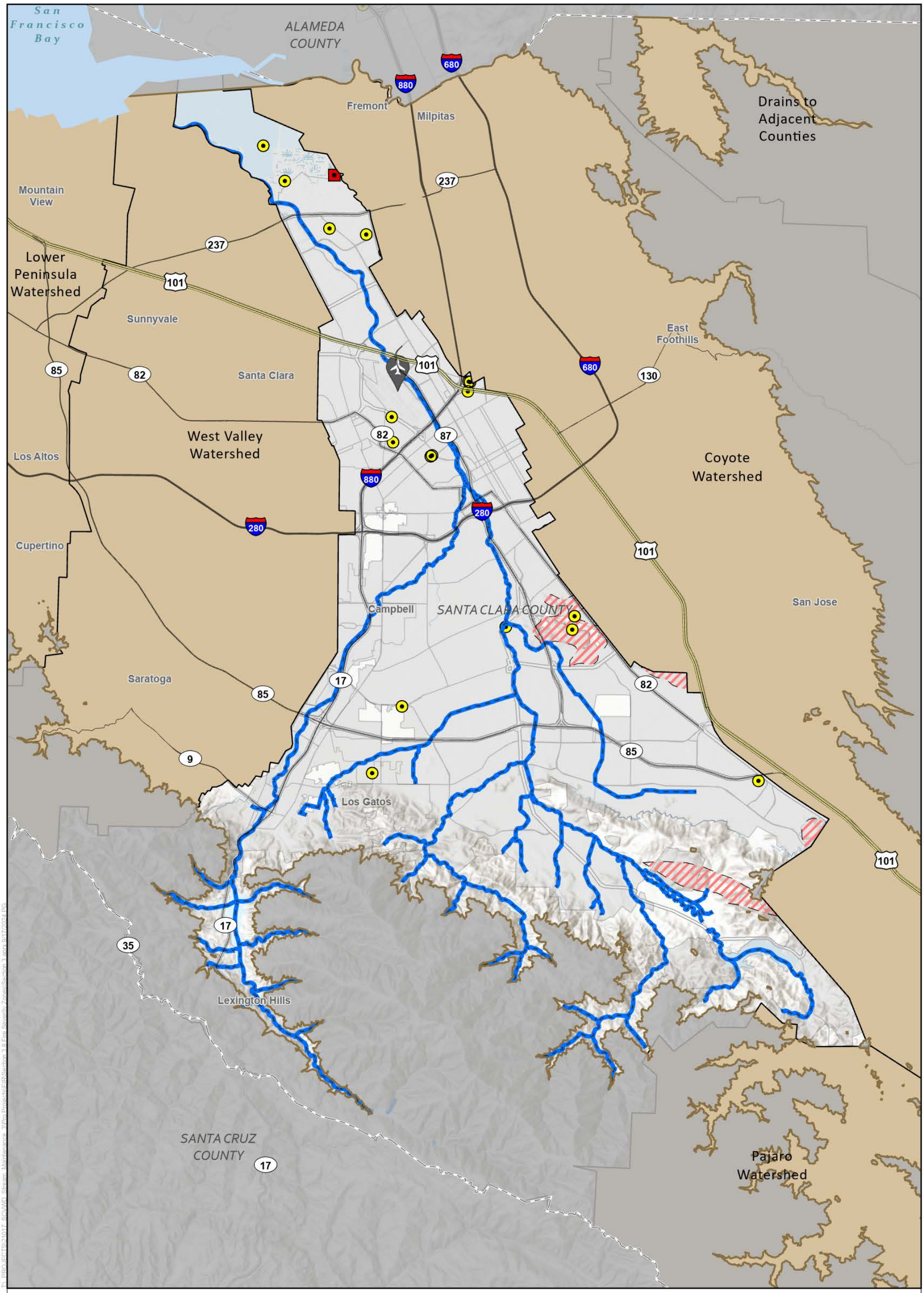

Figure 3.8-1
Hazardous Material Sites and Naturally Occurring Asbestos
Guadalupe Watershed

Source: State of California GIS Services, https://services.gis.ca.gov/arcgis/rest/services; Santa Clara County GIS Services, https://mapservices.sccgov.org/arcgis/rest/services

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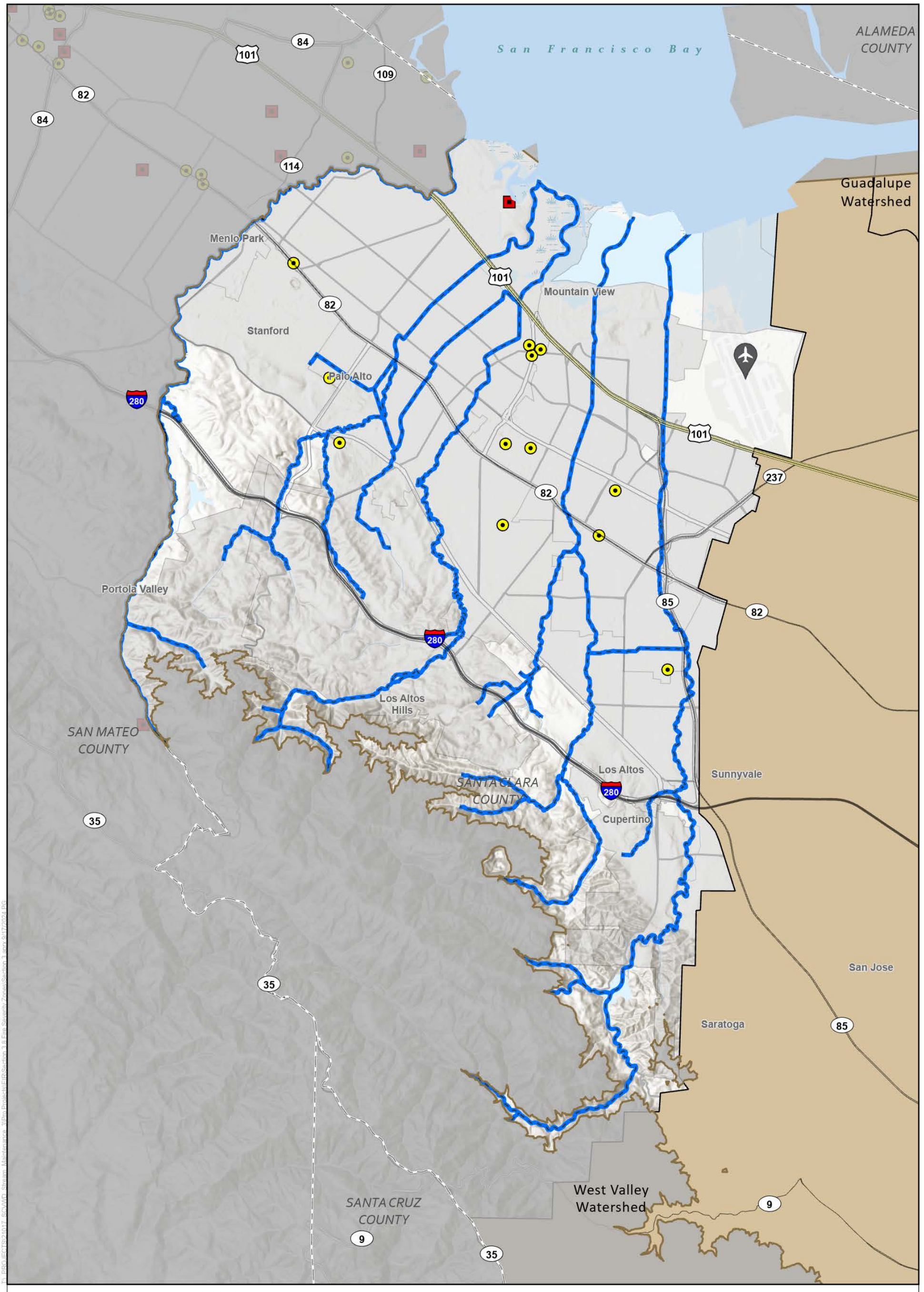

Figure 3.8-1
Hazardous Material Sites and Naturally Occurring Asbestos
Lower Peninsula Watershed

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Source: State of California GIS Services, https://services.gis.ca.gov/arcgis/rest/services; Santa Clara County GIS Services, https://mapservices.sccgov.org/arcgis/rest/services

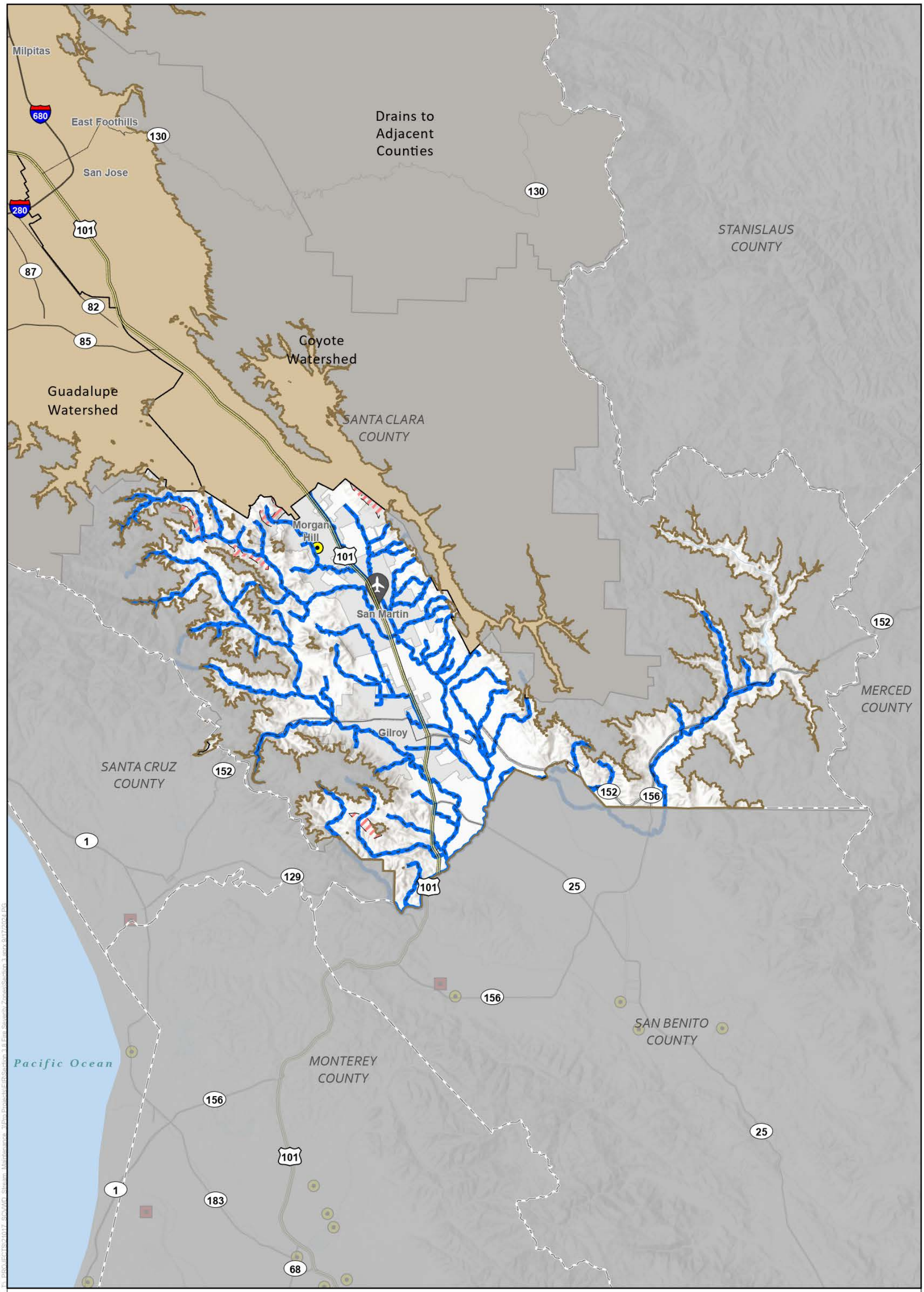

Figure 3.8-1
Hazardous Material Sites and Naturally Occurring Asbestos
Pajaro Watershed

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Source: State of California GIS Services, https://services.gis.ca.gov/arcgis/rest/services; Santa Clara County GIS Services, https://mapservices.sccgov.org/arcgis/rest/services

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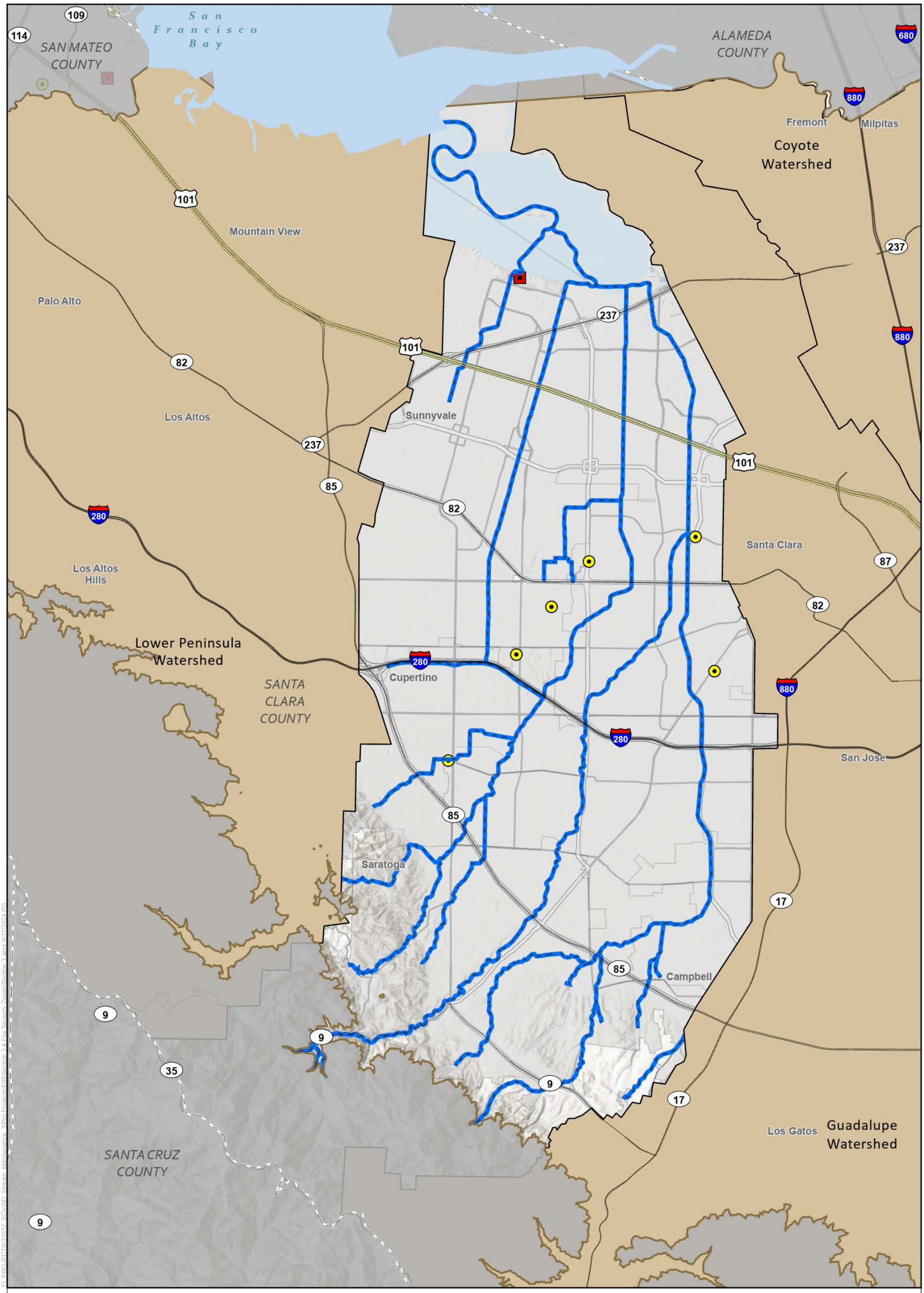

Figure 3.8-1
Hazardous Material Sites and Naturally Occurring Asbestos
West Valley Watershed

Source: State of California GIS Services, https://services.gis.ca.gov/arcgis/rest/services; Santa Clara County GIS Services, https://mapservices.sccgov.org/arcgis/rest/services

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3.8.4 Impact Analysis

Methodology

The analysis used a qualitative approach to assess the potential for the Program Renewal activities to result in adverse impacts to the public or environment during or after their implementation related to hazards and hazardous materials. The impact analysis baseline is the existing conditions at the time of the May 2022 Notice of Preparation and evaluates impacts from the maintenance activities implemented for the existing Program (SMP-2) and the new activities proposed for the Program Renewal. The assessment and significant determinations were guided by the significance criteria provided in the California Environmental Quality Act (CEQA) Guidelines, which are provided below. The analysis considered the implementation of applicable Best Management Practices (BMPs) and adherence to existing laws and regulations. Where feasible, mitigation measures were identified to reduce significant impacts.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Program Renewal would result in a significant impact on hazards or hazardous materials if it would:

A. create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials;
B. create a significant hazard to the public or 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 that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, and as a result, create a significant hazard to the public or the environment;
E. result in a safety hazard or excessive noise for people residing or working in the project area if the project is within the jurisdiction of an airport land use plan or, where such a plan has not been adopted within two miles of a public airport or public-use airport or private airstrip;
F. impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
G. expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

For purposes of the analysis included below, Appendix G CEQA significance criteria (a) and CEQA significance criteria (b) were combined into one discussion to better fit the Program Renewal.

Appendix G of the CEQA Guidelines suggests that a project may result in significant impacts if it creates a safety hazard or excessive noise for people residing or working in the project area if the project is located within the jurisdiction of an airport land use plan or within two miles of a public airport or private airstrip. Although Program Renewal activities may be

performed within two miles of an airport, these activities would not interfere with airport operations, would not involve the use of any equipment that would affect aircraft utilizing any airports in the Program Renewal Area, and would not result in a substantial safety hazard or excessive noise for people residing or working in vicinity of airports. For these reasons, this issue is not discussed further in this Draft Subsequent Environmental Impact Report (DSEIR).

Appendix G of the CEQA Guidelines suggests that projects may have a significant effect on hazardous and hazardous materials if they would expose people or structures to a significant risk of loss, injury, or death involving wildland fires (criterion g). The Program Renewal's potential for exposing people or structures to wildland fires is analyzed in Section 3.15, "Wildfire."

The Program Renewal's maintenance activities would not create standing water that would foster mosquitoes, nor would it interfere with abatement efforts conducted by the Valley Water, so this issue is not discussed further.

Environmental Impacts

Impact HAZ-1: Create a Significant Hazard to the Public or Environment through the Routine Use, Transport, Disposal, or Accidental Release of Hazardous Materials (Less than Significant with Mitigation)

Program Renewal activities would involve the routine transport, use, and disposal of hazardous materials such as herbicides, fuel, oil, solvents, and related materials. These materials would be primarily found within maintenance equipment but may also be stored onsite at designated staging areas for refueling or maintaining equipment or transported as necessary to work areas. Although maintenance activities would be temporary in any one location, and generally confined to a small area surrounding channels, maintenance activities would be in or near public areas where residents or recreational users could be exposed to hazardous materials and/or channels that could sequester or transport chemicals in the water and sediment. Therefore, routine transport, use, and disposal of hazardous materials could potentially create a hazard to the public or to the environment.

Additionally, hazardous materials could be potentially released to the environment through upset or accident conditions if adequate precautions are not taken. Such a release could harm aquatic or terrestrial organisms and pose a hazard to construction workers and/or the public. Additional details regarding the transport, use, disposal, and accidental release of hazardous materials for the Program Renewal activities are provided below.

Vegetation Management

Maintenance activities under the Program Renewal would involve the handling and application of herbicides. Specifically, the Program Renewal's vegetation management activities would include the transport of herbicides to the work site, use of herbicides to control vegetation within the channel and along the bank and upland areas, and the disposal of herbicide containers or applicator equipment after completing the work. Valley Water currently uses Category III and IV herbicides (with the exception of triclopyr-choline and paraffinic oil, which are Category II). Category III and IV herbicides are the least toxic

chemical herbicides designated by USEPA (refer to Table 3.8-3 above for the specific herbicides that could be used under the Program Renewal and the projected annual usage amounts) and continually works to minimize herbicide use as much as is practical, as described in the SMP Manual (**Appendix A**). Application of herbicides would comply with all herbicide label instructions and all relevant permits including the Statewide General NPDES permit for aquatic pesticide use. Valley Water also complies with its APAP, a comprehensive plan that describes projects, practices to reduce water quality impacts, and monitoring requirements. In addition, Valley Water's Pesticide Policy requires applicators of all pesticides to be licensed by the California Department of Pesticide Regulation or work under the supervision of someone who is licensed.

Additionally, as hazardous materials, herbicides would be subject to BMPs regarding the management of hazardous materials during Program Renewal activities, which would minimize effects associated with the transport, use, and disposal of herbicides during maintenance work. Implementation of BMPs would also help to minimize any potential for accidental releases of herbicides during application.

Vegetation management activities would require the use of fuels and lubricants for maintenance equipment. The use, transport, disposal, or accidental spills of these hazardous materials could adversely affect people or wildlife if the pollutants were released into the water or the ground. However, Program Renewal activities would be conducted in compliance with federal, state, and local regulations, including OSHA and Cal/OSHA requirements that include safety procedures for the handling of hazardous materials which would reduce the potential for a significant hazard to the public or environment. BMPs listed below would also reduce the potential for a significant hazard to the public or environment by implementing hazardous materials management and response measures.

Management of Animal Conflicts

Animal conflict management activities conducted under the Program Renewal would include integrated pest management, physical alterations such as surface compaction of levee faces or filling burrows, bird nest deterrence, bat inspection and exclusion, habitat modification through vegetation management, live (nonlethal) trapping, chemical repellents (e.g., plant extracts), and fumigation. Fumigants, including gas cartridges and aluminum phosphide, are only used when other animal control methods are inadequate to feasibly address a conflict. Fumigants would not be used within the habitat areas of special-status species amphibians. To prevent potential hazardous impacts associated with fumigation, fumigant application would follow all label use restrictions. Additionally, no rodenticides would be used under Program Renewal.

Additionally, management of animal conflicts would require the use of fuels and lubricants for maintenance equipment. Program Renewal activities would be conducted in compliance with federal, state, and local regulations including OSHA and Cal/OSHA requirements that include safety procedures for the handling of hazardous materials which would reduce the potential for a significant hazard to the public or environment. BMPs listed below would also reduce the potential for a significant hazard to the public or environment by implementing hazardous materials management and response measures.

Within the Program Renewal Area, NOA is known to be present adjacent to Program Renewal Area channels where maintenance activities may occur within the Guadalupe, Coyote, and

Pajaro watersheds (refer to Figure 3.8-1). Although there is no health threat if asbestos fibers in soil and rocks remain undisturbed and do not become airborne, ground disturbing activities such as management of animal conflicts could release NOA into the air and may expose the public, including maintenance workers to airborne asbestos. The Program Renewal would comply with Bay Area Air District's ATCM for Construction, which requires the implementation of measures to minimize dust emissions and would also implement BMP GEN-36 (Dust Management) which requires the implementation of dust control measures (e.g., watering disturbed surfaces, covering materials in haul trucks) to minimize potential impacts. However, a significant impact may still occur to the public when ground-disturbing activities occur in areas that contain NOA. Implementation of **Mitigation Measure HAZ-1** requires the implementation of dust control measures when conducting ground-disturbing activities using mechanized heavy equipment in areas containing NOA to reduce the potential for the hazards to become airborne. Through the implementation of **Mitigation Measure HAZ-1,** impacts related to hazards to the public and the environment through NOA would be less than significant with mitigation.

Other Maintenance

Other maintenance activities including sediment removal, bank stabilization, downed tree management, and minor maintenance activities would use heavy equipment that would require fuel, oil, lubricants, and other potentially hazardous materials. These hazardous materials would be transported to and from maintenance sites and would be removed once projects were completed. If hazardous materials were released into the water or the ground during equipment refueling or maintenance activities, contamination and harm to people or wildlife could result. However, similar to what was described above, Program Renewal activities would be conducted in compliance with federal, state, and local regulations including OSHA and Cal/OSHA requirements that include safety procedures for the handling of hazardous materials which would reduce the potential for a significant hazard to the public or environment. BMPs listed below would also reduce the potential for a significant hazard to the public or environment by implementing hazardous materials management and response measures.

Ground-disturbing activities such as sediment removal, bank stabilization, and minor maintenance activities could potentially disturb contaminated sediments that may be present in channels or the work area. Mobilization/transport of contaminated sediments or soils associated with the Program Renewal could potentially create a hazard to the public and the environment. Additionally, improper handling and disposal of contaminated sediments, including improper stockpiling of sediment, could also create a hazard to the public and the environment. As described in Section 3.14, "Water Quality," Valley Water would adhere to its Sediment Characterization Plan that requires sediment testing to determine if soil is contaminated, which would minimize impacts associated with soil disturbance. Additionally, handling and disposal of any contaminated sediment encountered/removed as part of Program activities would be subject to applicable laws and regulations governing hazardous materials, including Cal/OSHA regulations which require all activities to be performed in accordance with a site-specific health and safety plan to protect worker and public health. Compliance with these existing requirements, as well as implementation of BMPs listed below would minimize the potential for a significant hazard to the public or the environment by implementing hazardous materials management and disposal measures.

As described above, ground disturbing activities such as bank stabilization and sediment removal could release NOA into the air and may expose the public, including maintenance workers to airborne asbestos which would be a significant impact. The Program Renewal would comply with Bay Area Air District's ATCM for Construction, which requires the implementation of measures to minimize dust emissions and would implement BMP GEN-36 (Dust Management) which requires the implementation of dust control measures (e.g., watering disturbed surfaces, covering materials in haul trucks) to minimize potential impacts. However, a significant impact may still occur to the public when ground-disturbing activities occur in areas that contain NOA. Implementation of **Mitigation Measure HAZ-1** requires the implementation of dust control measures when conducting ground-disturbing activities using mechanized heavy equipment in areas containing NOA to reduce the potential for the hazards to become airborne. Through the implementation of **Mitigation Measure HAZ-1**, impacts related to hazards to the public and the environment through NOA would be less than significant with mitigation.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce potential impacts associated with the use, transport, disposal, or accidental release of hazardous materials as a result of Program Renewal. A full description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-2: Instream Herbicide Application** establishes protection measures for the use of instream herbicides and prohibits the use of herbicides in certain conditions to reduce potential impacts associated with herbicide use.
- **BMP GEN-24: Work Site Housekeeping** requires the work site to be maintained in a neat and orderly condition, including storing materials and equipment to avoid leaks or other potential impacts associated with hazardous materials.
- **BMP GEN-26: Staging and Stockpiling of Materials** establishes requirements for staging and stockpiling materials to minimize potential impacts associated with these activities, including storing materials away from areas where they could spill into waterbodies or storm drains.
- **BMP GEN-29: On-Site Hazardous Materials Management** requires the proper management of hazardous materials, including storing hazardous materials and wastes in watertight containers with appropriate secondary containment. Generators and other equipment with the potential to leak or spill hazardous materials would also be stored and operated with secondary containment to minimize potential impacts of a hazardous materials release.
- **BMP GEN-30: Existing Hazardous Materials** requires the removal and disposal of hazardous materials found at maintenance sites in accordance with applicable regulatory requirements.
- **BMP GEN-32: Painting and Paint Removal** requires Valley Water to avoid paving and seal coating in wet weather and when rain is forecasted to prevent hazardous materials from coming into contact with water.
- **BMP GEN-33: Spill Prevention and Response** includes the implementation of measures to prevent the accidental release of hazardous materials, specifies protocols for spill response and reporting, and requires that cleanup supplies are available on site.

- **BMP GEN-34: Existing Hazardous Sites** requires Valley Water to conduct a search for existing known contaminated sites during preparation of the Notice of Proposed Work (NPW). For any ground-disturbing activities within 1,500 feet of an open contamination site, Valley Water will work with the RWQCB case manager to ensure maintenance activities would not affect cleanup work or threaten the public or environment.
- **BMP GEN-35: Fire Prevention** implements measures to reduce the risk of fire from maintenance activities by equipping equipment with spark arrestors, having fire suppression available at the work site, and keeping flammable materials away from equipment.
- **BMP GEN-36: Dust Management** requires Valley Water to implement the Bay Area Air District's Basic Dust Control Measures that include watering exposed soils, covering haul trucks, limiting vehicle speeds, among others to reduce fugitive dust that may contain NOA.
- **BMP GEN-37: Vehicle and Equipment Maintenance** requires that vehicles and equipment are kept clean without excessive build-up of oil and grease, and that equipment used in creek channels be inspected for leaks each day prior to initiation of work. Equipment servicing and repairs will also be conducted outside of the channel to prevent pollutants from reaching surface waters.
- **BMP GEN-38: Vehicle Cleaning** requires that equipment be cleaned prior to transfer and use in a different watershed and vehicle and equipment washing will occur at approved wash areas in Valley Water's corporation yard.
- **BMP GEN-39: Vehicle and Equipment Fueling** prohibits fueling of vehicles and equipment in the channel or immediate floodplain and requires that designated fueling locations and secondary containment are provided to prevent the accidental release of fuel.
- **BMP ANI-2: Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail** prohibits the use of fumigants within the range of salt marsh harvest mouse, California's Ridgway's Rail, or California Black Rail identified on Program Renewal range maps.
- **BMP ANI-3: Burrowing Owl Buffer Zone** prohibits fumigant use within known burrowing owl locations.
- **BMP ANI-4: Animal Control in Sensitive Amphibian Habitat** prohibits the use of harmful rodenticides in the Program Renewal Area and prohibits the use of fumigants within habitat areas of special-status amphibians.
- **BMP HM-4: Posting and Notification for Pesticide Use** requires posting of areas where pesticides will be used.

Conclusion

Implementation of BMPs and compliance with all relevant federal, state, and local laws, regulations, and policies, including Cal/OSHA regulations regarding handling and disposal of contaminated soil, would minimize the potential for the Program Renewal to result in a significant hazard to the public or the environment from the use, transport, disposal, or accidental release of hazardous materials. Compliance with BMP GEN-36 (Dust Management) and Bay Area Air District's ATCM for Construction would reduce impacts from NOA, but not

to a less-than-significant level. Implementation of **Mitigation Measure HAZ-1** would further reduce impacts from NOA such that there would be no significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving NOA. Therefore, the impact would be **less than significant with mitigation.**

Mitigation Measure HAZ-1: Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever

Valley Water will be responsible for implementing the following dust control measures when conducting ground-disturbing activities using mechanized heavy equipment in areas containing NOA (as identified in Figure 3.8-1) consistent with the Bay Area Air District's NOA Technical Advisory Requirements (BAAQMD). When working in an area identified as containing NOA, if there are circumstances that suggest that NOA may not be present in the disturbed area (such as when working in areas that consist of fill brought in from outside the area), testing for NOA would be conducted. If testing determines that the soil does not contain significant amounts of NOA, the measures included below would not need to be implemented. However, if testing is not conducted in these areas or if testing reveals the presence of significant amounts of NOA, the following dust control measures will be implemented:

- Prior to any ground disturbance, areas to be graded or excavated shall be kept adequately wet with water to minimize visible emissions from the release of particulate matter into the air.
- Storage piles containing NOA shall be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile. Covers, when used, shall be physically secured and maintained throughout their use.
- As needed to prevent transportation of soil containing NOA, equipment shall be washed down after use and prior to the equipment moving from the work area onto a paved public road. Wheels shall be washed prior to moving equipment from construction areas containing NOA to areas that do not contain NOA.
- Construction vehicles shall be limited to 15 miles per hour (mph) or less on the work site. Vehicles hauling NOA-containing materials outside NOA-containing areas shall have loads wetted and/or covered such that no visible emissions are generated. Under no circumstances shall haul trucks be allowed to transport NOA-containing materials in a manner that allows visible particle emissions from either the wheels while traveling over NOA-containing materials or from the load of the truck.
- Suspension of ground-disturbing activities shall be required when wind speeds exceed 20 mph for a minimum of 30 minutes.
- Work boot wash stations shall be provided at the maintenance site.
- Vehicles that exit the site to a public paved road from an unpaved area shall utilize track-out prevention and control measures, including a gravel pad, a tire shaker, or a wheel wash system. Visible track-out from a paved public road shall be removed where vehicles exit the work site by using wet sweeping or a high-efficiency particulate air (HEPA) filter or vacuum device equipped with an equivalent particulate filter at the end of each

day.

- The Valley Water Environmental Health and Safety unit shall be consulted to determine whether modifications to these measures or additional safety measures are needed when working in an area that contains NOA.
- Valley Fever is currently relatively uncommon in Santa Clara County. In the event that Valley Fever reaches highly endemic levels in Santa Clara County, Valley Water Operations and Maintenance staff will consult with Valley Water's Environmental Health and Safety unit to establish measures that minimize the risk of Valley Fever infection. Where appropriate, these measures may incorporate measures for NOA listed above or adaptations thereof.

Impact HAZ-2: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan (Less than Significant)

This impact analysis discusses Program Renewal impacts on emergency response and evacuation generally and is not limited to adopted emergency response or evacuation plans. Program activities that involve the operation of heavy equipment on roadways (e.g., sediment removal, vegetation management, bank stabilization, etc.) could potentially interfere with traffic movement and impair emergency response or evacuation operations. Temporary road or lane closures, as well as traffic associated with the Program Renewal, could also potentially affect emergency response or evacuation operations. Program Renewal activities could require the use and/or temporary storage of heavy equipment, vehicles, sediments, and other materials near or on the work site which may require temporary road or lane closures. Temporary road closures may interfere with traffic movement and impair emergency response or evacuation procedures in the event of an emergency. In addition, increased traffic generated by Program Renewal activities from workers traveling to and from the work site may also interfere with emergency response and evacuation efforts (see Section 3.12, "Traffic and Transportation," for more discussion of transportation-related impacts). To the extent feasible, work would be staged and conducted to maintain two-way traffic flow on public roadways in the vicinity of work sites.

As described above, major arterials would serve as evacuation routes through the County as well as major highways (e.g., U.S. 101, I-280, I-880, and SR-17) in the event of a large-scale evacuation. Thus, these roads could be impacted if Valley Water activities required temporary lane or road closures during maintenance activities. Implementation of BMPs, described below, would reduce the potential for Program Renewal activities to impair emergency response or evacuation procedures by notifying the public of upcoming maintenance work, ensuring that emergency service providers are notified of any planned lane or road closures, implementing public safety measures to reduce impediments to traffic movement, and implementing appropriate traffic control measures in the event that temporary road or lane closures are required .

Applicable Best Management Practices

The BMPs summarized below would be implemented to minimize impacts to emergency response and emergency evacuation procedures as a result of implementation of the Program Renewal. A full description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-43: Public Outreach** will ensure that the public and local governments, including emergency response providers, are informed of upcoming maintenance work to reduce potential effects to emergency response times.
- **BMP GEN-44: Implement Public Safety Measures** will ensure that work sites have proper signage and trucks will be allowed to pull into and out of work site access points during temporary lane closures to reduce traffic delays.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measures** requires that temporary lane closures be coordinated with the appropriate jurisdictional agency and local emergency service provider, and appropriate traffic control measures are implemented so that emergency vehicle access and response is not impeded.

Conclusion

As stated above, implementation of BMPs would require Program Renewal-related traffic and temporary lane or road closures resulting from Program Renewal activities to be coordinated with local emergency response agencies to help maintain emergency access and evacuation routes. With the implementation of the above-listed BMPs, impacts on emergency response and evacuation, including impacts on emergency response and evacuation plans, would be **less than significant.**

Mitigation Measures: No mitigation is required.

Impact HAZ-3: Be Located on a Site Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Section Code 56962.5 (Less than Significant)

According to the GeoTracker database, EnviroStor database, and USEPA Superfund database (SWRCB 2024b; DTSC 2024a; USEPA 2024c), a total of 563 sites are still active in Santa Clara County and either are being remediated or remain in need of remediation. Out of these active sites, 48 sites are located within 1,500 feet of a Program Renewal channel (refer to Table 3.8-1). As discussed previously, the locations and extent of maintenance activities change each year. The potential for the Program Renewal activities to affect known contaminated sites is discussed further below.

Sediment Removal/Bank Stabilization

Ground disturbing activities such as sediment removal and bank stabilization activities could potentially disturb known existing contaminated sites. However, the potential to disturb existing contaminated sites in the Program Renewal Area would be evaluated as part of the annual maintenance planning process under the NPW prior to conducting maintenance work. (refer to BMP GEN-34 [Existing Hazardous Sites]). If the database search determines that ground disturbing activities such as sediment removal and bank stabilization activities would occur within 1,500 feet of an open site, Valley Water will contact the case manager and work with the case manager to ensure that Program Renewal activities do not affect cleanup or monitoring activities or threaten the public or environment. Furthermore, additional BMPs would further minimize potential impacts associated with known contaminated sites by minimizing the area of disturbance and access points and ensuring proper disposal of found hazardous materials on site.

In addition, portions of the Guadalupe River watershed within the Program Renewal Area are affected by historic mercury mining activities. Soil and groundwater in some areas of this watershed contain hazardous levels of mercury contamination (SWRCB 2024c). Thus, there is a potential for sediment removal and bank stabilization activities to expose the mercury and potentially release it into the environment if proper handling methods are not implemented. Implementation of BMP GEN-3 (Avoid Exposing Soils with High Mercury Levels) would require soil testing for soils that are likely to be disturbed or excavated and if mercury levels are exceeded, this BMP requires soil remediation to be conducted.

Other Maintenance Activities

Other Program Renewal activities that involve ground disturbance, such as compacting levee surfaces under management of animal conflicts, vegetation management, and minor sediment removal activities, could have the potential to disturb existing contaminated sites. Similar to sediment removal and bank stabilization activities described above, implementation of BMPs listed below would reduce potential impacts by conducting a search of known contaminated sites prior to conducting maintenance work, testing soils in the Guadalupe River watershed for mercury and implementing appropriate remediation measures, minimizing the area of disturbance and stream access points, and ensuring proper disposal of found hazardous materials. Additionally, and similar to what was described above, Program Renewal activities would be conducted in compliance with federal, state, and local regulations including OSHA and Cal/OSHA requirements that include safety procedures for the handling of hazardous materials which would reduce the potential for a significant hazard to the public or environment.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce potential impacts associated with Program Renewal activities occurring on a known hazardous materials site. A full description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** requires sediment removal and bank stabilization activities occurring in portions of the Guadalupe River watershed affected by historic mercury mining to test soil for mercury and implement remediation activities if soils exceed established mercury levels. Workers will also be required to wear personal protective equipment to maintain exposure levels below OSHA standards.
- **BMP GEN-4: Minimize the Area of Disturbance** requires soil disturbance to be minimized to the maximum extent feasible.
- **BMP GEN-28: Stream Access** establishes temporary access points close to the work area and requires the use of existing exiting ramps and roads to minimize disturbance around the work area and to channels.
- **BMP GEN-30: Existing Hazardous Materials** ensures that hazardous materials found on site are disposed of properly according to applicable regulatory requirements.
- **BMP GEN-34: Existing Hazardous Sites** requires Valley Water to conduct a search for existing known contaminated sites as part of the annual NPW prior to conducing maintenance work.

Conclusion

With the implementation of the above-listed BMPs, and compliance with applicable hazardous materials laws and regulations, ground-disturbing activities conducted under the Program Renewal would not create a significant hazard to the public or environment from known hazardous materials sites. Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

Impact HAZ-4: Be Located on a Previously Undiscovered Contaminated Site (Less than Significant)

Channels are common locations for illegal dumping of trash containing hazardous wastes, such as tires, oil filters, and paint cans. In addition, pollutants transported in stormwater runoff can accumulate in these waterbodies. The potential for Program Renewal activities to be located on a previously undiscovered contaminated site is discussed further below.

Sediment Removal/Bank Stabilization

Ground-disturbing activities associated with bank stabilization and sediment removal activities could disturb previously unknown buried contamination including illegally dumped trash. Contaminants also are transported from streets and paved urban areas through storm drains and into channels. Areas surrounding storm drain culvert outfalls can accumulate urban contaminants, such as heavy metals and petroleum byproducts from automobiles. Many of these contaminants could bind with sediment in the channel bed, where they could accumulate. When sediment is removed, toxic concentrations of contaminants could be present in the excavated sediment at levels considered hazardous if released into the environment. Additionally, excessive erosion and bank instability could occur near culvert outfalls, resulting in the need for bank repairs and disturbance of contaminated soils. Program Renewal workers who are in direct contact with soil or groundwater that contained hazardous levels of constituents would perform all activities in accordance with a site-specific hazardous operations health and safety plan, as outlined in Cal/OSHA standards which would reduce the potential for impacts associated with contaminated soil or groundwater. As described in Section 3.14, "Water Quality," Valley Water would also adhere to its Sediment Characterization Plan, which requires sediment testing to determine if soil is contaminated, to minimize impacts associated with soil disturbance. Furthermore, implementation of BMPs listed below would reduce potential impacts to unknown contaminated sites by testing soils in the Guadalupe River watershed for mercury and implementing appropriate remediation measures, minimizing the area of disturbance and stream access points, ensuring proper disposal of found hazardous materials, implementing spill prevention and response measures, and conducting a search of known contaminated sites prior to conducting maintenance work. As described in Section 3.14, "Water Quality," over the long-term, sediment removal and bank stabilization would improve channel conditions by removing existing contamination from the channel (both trash and contaminated sediments) and by reducing the potential for erosion and sediment transport from unstable banks, respectively.

Other Maintenance Activities

Other Program Renewal activities, such as management of animal conflicts, vegetation management, and minor maintenance activities, that involve minor ground disturbance could have the potential to disturb undiscovered contaminated sites. To minimize potential impacts from contaminated soil and groundwater, Program Renewal workers would comply with all applicable federal and state regulations and plans including a site-specific hazardous operations health and safety plan, as outlined in Cal/OSHA standards which would reduce the potential for impacts associated with contaminated soil or groundwater. Additionally as described in Section 3.14, "Water Quality," Valley Water would also adhere to its Sediment Characterization Plan, which requires sediment testing to determine if soil is contaminated, to minimize impacts associated with soil disturbance. Implementation of BMPs listed below would also minimize potential impacts to encountering unknown contaminated sites by testing soils in the Guadalupe River watershed for mercury and implementing appropriate remediation measures, minimizing the area of disturbance and stream access points, ensuring proper disposal of found hazardous materials, implementing spill prevention and response measures, and conducting a search of known contaminated sites prior to conducting maintenance work.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce potential impacts associated with Program Renewal activities occurring on an unknown hazardous materials site. A full description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** requires sediment removal and bank stabilization activities occurring in portions of the Guadalupe River watershed affected by historic mercury mining to test soil for mercury and implement remediation activities if soils exceed established mercury levels. Workers will also be required to wear personal protective equipment to maintain exposure levels below OSHA standards.
- **BMP GEN-4: Minimize the Area of Disturbance** requires soil disturbance to be minimized to the maximum extent feasible.
- **BMP GEN-28: Stream Access** establishes temporary access points close to the work area and requires the use of existing exiting ramps and roads to minimize disturbance around the work area and to channels.
- **BMP GEN-30: Existing Hazardous Materials** ensures that hazardous materials found on site are disposed of properly according to applicable regulatory requirements.
- **BMP GEN-33: Spill Prevention and Response** ensures that Valley Water would have equipment and materials for cleaning up spills on site and that appropriate measures are followed to prevent impacts to natural resources.
- **BMP GEN-34: Existing Hazardous Sites** requires Valley Water to conduct a search for existing known contaminated sites as part of the annual NPW prior to conducing maintenance work.

Conclusion

If unknown contaminants were found during Program Renewal activities, the area would be treated as if a hazardous spill had occurred, and any ground-disturbing activities, including disturbance of previously undiscovered contamination or soils, would be handled in a manner that would protect both worker health and the environment, in compliance with all laws and regulations, including the preparation of a site-specific hazardous operations health and safety plan, as outlined in Cal/OSHA standards, which would reduce the potential for impacts associated with contaminated soil or groundwater. Therefore, with the implementation of the above-listed BMPs, ground-disturbing activities conducted under the Program Renewal would not create a significant hazard to the public or environment from unknown contaminated sites. Therefore, this impact would be **less than significant**.

Mitigation Measures: No mitigation is required.

Impact HAZ-5: Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School (Less than Significant with Mitigation)

A total of 405 public schools are located in Santa Clara County (Santa Clara County Office of Education 2024) and 222 schools are located within 0.25 mile of a Program Renewal channel (refer to Table 3.8-4). Most of these schools are in session during a traditional school calendar year; however, some are open year-round. Thus, children may be present at schools during Program Renewal implementation and could potentially be exposed to hazardous materials or emissions associated with Program Renewal activities.

Heavy construction equipment used in Program Renewal activities would emit some diesel exhaust and related emissions that can be hazardous. In general, these emissions (if they were to occur in close proximity to a school) would be similar to emissions associated with road construction projects and other construction projects, which, by necessity, must occur in proximity to a school from time to time. While the amount and duration of the emissions would depend on the specific characteristics of the maintenance project, the emissions would be well below the exposure period of concern (i.e., the exposure periods for diesel PM are based on 9-, 40-, and 70-year periods) due to the short-term and highly variable nature of the emissions (refer to Section 3.3, "Air Quality," for more of a discussion on diesel exhaust and emissions). Therefore, diesel emissions would not pose an acute health hazard to children at any nearby school.

As described under Impact HAZ-1, the Program Renewal would transport, store, use, and dispose of hazardous materials, such as herbicides, fuel, oil, lubricants, and solvents. While it is possible that such handling of materials could occur in proximity to a school, these activities would not pose a significant health hazard to school children. The Program Renewal would implement BMPs that would require safe storage, handling, and disposal of hazardous materials and minimize the potential for accidental releases of hazardous materials to the environment. Ground-disturbing activities may be located in an area that supports NOA, as discussed under Impact HAZ-1, or that involves a risk of exposure to Valley Fever, as discussed in Impact HAZ-6. However, because schools are generally located within urban areas, there is a low likelihood of undisturbed soils containing NOA being present within 0.25 mile of a school. Nevertheless, the release of NOA or the fungus that causes Valley Fever into the air from ground-disturbing activities could expose schools to airborne hazards, such as

asbestos or Valley Fever. The exposure of children to asbestos is of particular concern because their longer life expectancy (from the date of exposure) exceeds the latency period for asbestos-related disease. Thus, impacts related to exposure of sensitive receptors to NOA during ground-disturbing activities would be significant. For the reasons explained under Impact HAZ-1, implementation of **Mitigation Measure HAZ-1** would reduce impacts associated with NOA and other airborne hazards on nearby schools to less than significant with mitigation. Impacts associated with exposure to Valley Fever are discussed below in Impact HAZ-6.

As described above, herbicides would be used under the Program Renewal; however, if herbicide use were to be required in immediate proximity to, or within, school grounds, Valley Water would be required to follow the Healthy School Act and implement associated regulations required by the California Education Code. Compliance with these existing laws and regulations would minimize potential hazards from herbicide use by restricting the use of certain herbicides, noticing for the application of herbicides at schools, and posting signage of where the herbicide will be applied.

Animal conflict management may include the use of fumigants which may occur in close proximity to or within school grounds. However, fumigant application would follow all label use restrictions and be placed directly in animal (squirrel or gopher) burrows to minimize any potential hazards from fumigant use. Additionally, no harmful rodenticides would be used under the Program Renewal.

Applicable Best Management Practices

The BMPs summarized below would be implemented to minimize potential impacts associated with the handling of hazardous materials in close proximity to schools. A full description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-2: Instream Herbicide Application Work Window** establishes protection measures for the use of instream herbicides and prohibits the use of herbicides in certain conditions to reduce potential impacts associated with herbicide use.
- **BMP GEN-24: Work Site Housekeeping** requires the work site to be maintained in a neat and orderly condition, including storing materials and equipment to avoid leaks or other potential impacts associated with hazardous materials.
- **BMP GEN-26: Staging and Stockpiling of Materials** establishes requirements for staging and stockpiling materials to minimize potential impacts associated with these activities including storing materials away from areas where they could spill into waterbodies or storm drains.
- **BMP GEN-29: On-Site Hazardous Materials Management** requires the proper management of hazardous materials including storing hazardous materials and wastes in watertight containers with appropriate secondary containment. Generators and other equipment with the potential to leak or spill hazardous materials would also be stored and operated with secondary containment to prevent the release.
- **BMP GEN-30: Existing Hazardous Materials** requires the removal and disposal of hazardous materials found at maintenance sites in accordance with applicable regulatory requirements.

- **BMP GEN-31: Paving and Asphalt Work** requires Valley Water to avoid paving and seal coating in wet weather and when rain is forecasted to prevent hazardous materials from coming into contact with water.
- **BMP GEN-33: Spill Prevention and Response** includes the implementation of measures to prevent the accidental release of hazardous materials, specifies protocols for spill response and reporting, and requires that cleanup supplies are available on site.
- **BMP GEN-34: Existing Hazardous Sites** requires Valley Water to conduct a search for existing known contaminated sites during preparation of the NPW. For any ground-disturbing activities within 1,500 feet of an open contamination site, Valley Water will work with the RWQCB case manager to ensure maintenance activities would not affect cleanup work or threaten the public or environment.
- **BMP GEN-35: Fire Prevention** implements measures to reduce the risk of fire from maintenance activities by equipping equipment with spark arrestors, having fire suppression available at the work site, and keeping flammable materials away from equipment.
- **BMP GEN-36: Dust Management** requires Valley Water to implement the Bay Area Air District's Basic Dust Control Measures that include watering exposed soils, covering haul trucks, limiting vehicle speeds, among others to reduce fugitive dust that may contain NOA.
- **BMP GEN-37: Vehicle and Equipment Maintenance** requires that all equipment is kept clean to prevent the excessive buildup of oil and grease and that incoming vehicles and equipment are checked for leaking fluids.
- **BMP GEN-38: Vehicle Cleaning** requires that equipment be cleaned prior to transfer and use in a different watershed and vehicle and equipment washing will occur at approved wash areas in Valley Water's corporation yard.
- **BMP GEN-39: Vehicle and Equipment Fueling** prohibits fueling of vehicles and equipment in the channel or immediate floodplain and requires that designated fueling locations and secondary containment are provided to prevent the accidental release of fuel.
- **BMP GEN-44: Implement Public Safety Measures** includes posting signs warning the public and recreational users of construction, allowing trucks to pull into access points during temporary lane closures, installing safety fencing along active bank repair sites, and providing traffic control and site security when necessary.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measures** includes measures for coordinating temporary lane closures with appropriate jurisdictional agencies and providing signage and flaggers.
- **BMP ANI-2: Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail** prohibits the use of fumigants within the range of salt marsh harvest mouse, California's Ridgway's Rail, or California Black Rail as identified on the range maps for the Program Renewal.
- **BMP ANI-3: Burrowing Owl Buffer Zone** prohibits fumigant use within known burrowing owl locations.

- **BMP ANI-4: Animal Control in Sensitive Amphibian Habitat** prohibits the use of harmful rodenticides in the Program Renewal and prohibits the use of fumigants within habitat areas of special-status amphibians.
- **BMP HM-4: Posting and Notification for Pesticide Use** requires posting of areas where pesticides will be used.

Conclusion

Implementation of the above-listed BMPs would minimize the potential risks associated with the use of or exposure to hazardous materials during Program Renewal activities near schools, by properly storing and managing these materials, minimizing the transport of these materials to any local waterbodies, notifying local residents of the use of pesticides, and designing bait traps for targeted species (that typically would have standard design features, such as openings that would be difficult for non-target species to enter). However, impacts associated with NOA would still be significant. Implementation of **Mitigation Measure HAZ-1** would reduce impacts associated with NOA at nearby schools. Therefore, the impact would be **less than significant with mitigation**.

> **Mitigation Measure HAZ-1: Implement Dust Control Measures in Areas Containing NOA** (Refer to Impact HAZ-1 above)

Impact HAZ-6: Create a Significant Hazard to Construction Workers or the Public Through the Exposure to Valley Fever During Construction Activities (Less than Significant with Mitigation)

As described under Section 3.8.3, "Environmental Setting," the soil-dwelling fungus, Coccidioides, that causes Valley Fever is present within Santa Clara County, although it is not present at high endemic levels. Although Valley Fever is relatively uncommon, it may be present in the soils within the Program Renewal Area. Thus, ground-disturbing activities including sediment removal and bank stabilization, management of animal conflicts, and other minor maintenance (e.g., limited grading) conducted under the Program Renewal would disturb the soil and potentially release the fungus into the air if it is present on-site.

Program Renewal activities would be conducted in accordance with relevant health and safety requirements, including OSHA and Cal/OSHA requirements and regulations in Title 8 of the Cal. Code of Regs. to address potential release of Valley Fever spores associated with soils disturbance. In compliance with these requirements, the construction contractor would provide awareness training to workers and provide protection against Valley Fever spores to minimize the public and worker exposure to Valley Fever. Additionally, Valley Water would comply with BMP GEN-36 (Dust Management), which requires the implementation of dust control measures such as watering disturbed soils, covering haul trucks, limiting vehicles speeds to 15 mph, minimizing idling times. Compliance with BMP GEN-36 (Dust Management) would control and minimize the potential release of Valley Fever spores into the air. Furthermore, many of the ground-disturbing activities conducted under the Program Renewal would occur in areas that are frequently disturbed; therefore, there would be a lower likelihood of the fungus being present within these areas and being released into the air.

However, a significant impact may still occur to the public or maintenance workers when ground-disturbing activities occur in undisturbed soils that have a higher likelihood of containing the fungus that causes Valley Fever. Implementation of **Mitigation Measure HAZ-1** would minimize risks from soil that may contain the fungus that causes Valley Fever by requiring implementation of additional dust control and track-out control measures in undisturbed areas to minimize dust, and requiring Valley Water Operations and Maintenance staff to consult with Valley Water Environmental Health and Safety staff to establish any additional measures to reduce the risk of Valley Fever infection if Valley Fever reaches highly endemic levels in Santa Clara County. Through the implementation of **Mitigation Measure HAZ-1**, impacts related to hazards to the public and the environment through the exposure to Valley Fever would be less than significant with mitigation.

Applicable Best Management Practices

The BMP summarized below would be implemented to reduce potential impacts associated with exposure of maintenance workers and the public to Valley Fever during Program Renewal activities. A full description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-36: Dust Management** requires Valley Water to implement Bay Area Air District's Basic Dust Control Measures that include watering exposed soils, covering haul trucks, limiting vehicle speeds, among others to reduce fugitive dust that may contain the fungus that causes Valley Fever.

Conclusion

Implementation of BMP GEN-36 (Dust Management) and compliance with OSHA and Cal/OSHA requirements and regulations in the Cal. Code of Regs, Title 8, Industrial Relations would minimize potential impacts from Valley Fever exposure during ground disturbing activities in disturbed areas. However, a significant impact may still occur when ground-disturbing activities occur in undisturbed areas that have a higher likelihood of containing the fungus that causes Valley Fever. Implementation of **Mitigation Measure HAZ-1** would further minimize risks from undisturbed soil that may contain the fungus that causes Valley Fever by requiring the implementation of additional dust control and track-out control measures to minimize dust emissions and consultation between Valley Water departments if Valley Fever reaches highly endemic levels in Santa Clara County. Therefore, impacts related to hazards to the public or environment through the exposure to Valley Fever would be **less than significant with mitigation**.

> **Mitigation Measure HAZ-1: Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever** (Refer to Impact HAZ-1 above)

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3.9 Hydrology and Geomorphology

3.9.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) as related to hydrology and geomorphology.

Hydrology is the science (or study) of water in the natural environment, with a focus on the circulation and distribution of water as expressed in the hydrologic cycle or water balance (Goudie 1994). Geomorphology is the study of the earth's surface, its landforms, and the processes that shape them. Within geomorphology, fluvial geomorphology is the more specific study of rivers and streams, and typically includes aspects of hydrology (the quantity and timing of watershed runoff that enters the river), hydraulics (the behavior of channelized flows in the river), and sediment dynamics (how sediment is variably eroded, transported, and deposited along the river continuum).

This section evaluates the potential for Program Renewal activities to affect the geomorphic form and function of rivers and creeks in the Program Renewal Area, particularly as it relates to erosion, sedimentation, and flooding, in accordance with the significance criteria established under the California Environmental Quality Act (CEQA). The section also evaluates impacts on groundwater supplies and recharge, and creation of surface runoff and impacts on stormwater drainage systems. This section supports the information presented in Section 3.4, "Biological Resources," and Section 3.14, "Water Quality."

3.9.2 Regulatory Setting

The following subsections discuss federal, state, and regional laws and regulations that pertain to hydrology and geomorphology for the Program Renewal. Applicable local plans, policies, regulations, and ordinances related to hydrology and geomorphology are included in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C discusses several plans throughout Santa Clara County and local jurisdictions that contain relevant strategies, policies, and goals for conserving and reclaiming water, implementing flood protection, maintaining and enhancing the health of groundwater basins, maintaining and improving storm drainage facilities, minimizing stormwater runoff and erosion impacts, protecting life and minimizing property damage from potential flood hazards, and conserving creeks and riparian areas.

Federal Plans, Policies, Regulations, and Laws

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Refer to Section 3.14, "Water Quality," for a detailed discussion of the CWA, including Sections 303, 401, 402, and 404. The Construction General Permit and Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit, which are implemented at the State level pursuant to CWA Section 402, are also discussed in Section 3.14, "Water Quality."

National Flood Insurance Act of 1968 and Flood Disaster Protection Act of 1973

The National Flood Insurance Act of 1968 (42 United States Code [USC] 4001 et seq.) provides federally backed flood insurance to communities that enact and enforce floodplain regulations. As part of its flood insurance program, the Federal Emergency Management Agency (FEMA) has developed a Community Rating System, which rewards communities that practice proactive flood management and educational activities above and beyond the minimum requirements of the National Flood Insurance Program (NFIP). The reward is an across-the-board reduction in insurance premiums for residents and businesses in a participating community. The Flood Disaster Protection Act of 1973 (42 USC 4001 et seq.) expanded the NFIP by increasing limits of coverage and by requiring known flood-prone communities to participate in the NFIP.

FEMA Levee Design and Maintenance Regulations

Guidance and criteria for levees included in the NFIP are provided in the FEMA Levee Design and Maintenance Regulations (44 Code of Federal Regulations [CFR] 65.10). Major criteria include freeboard, closure structures, embankment protection, embankment and foundation stability, settlement, interior drainage, and other design criteria. Operation and maintenance requirements are also discussed. Each of these criteria includes specific design guidelines that must be met in order for the levee to remain in the NFIP.

State Plans, Policies, Regulations, and Laws

Porter-Cologne Water Quality Control Act

Refer to Section 3.14, "Water Quality," for discussion of the Porter-Cologne Act. As described therein, the Porter-Cologne Act requires the regional water quality control boards (RWQCBs) to adopt Basin Plans for the protection of surface water and groundwater quality.

California Fish and Game Code Section 1602 – Lake and Streambed Alteration Agreement Program

Under Section 1602 of the California Fish and Game Code (F&G Code), the California Department of Fish and Wildlife (CDFW) regulates projects that affect the flow, channel, or banks of rivers, streams, and lakes. Section 1602 requires public agencies and private individuals to notify and enter into a streambed or lakebed alteration agreement with CDFW before beginning construction of a project that will substantially divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed.

Section 1602 contains additional prohibitions against the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake. Section 1602 may apply to any work undertaken within the 100-year floodplain of any body of water or its tributaries, including intermittent stream channels. In general, however, it is construed as applying to work within the active floodplain and/or associated riparian habitat of a wash, stream, or lake that provides benefit to fish and wildlife. It typically does not apply to drainages that lack a defined bed and banks, such as swales, or to very small bodies of water and wetlands such as vernal pools.

California Statewide Groundwater Elevation Monitoring Basin Prioritization

In 2009, the California State Legislature amended the California Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California. Under this amendment, the California Department of Water Resources (DWR) established the California Statewide Groundwater Elevation Monitoring program (CASGEM), which established the framework for regular, systematic, and locally managed monitoring in all of California's groundwater basins. The CASGEM program is essential to DWR's ranking all of California's basins by priority: high, medium, low, and very low. DWR's basin prioritization is based on the following factors:

1. Population overlying the basin or subbasin
2. Rate of current and projected growth of the population overlying the basin or subbasin
3. Number of public supply wells that draw from the basin or subbasin
4. Total number of wells that draw from the basin or subbasin
5. Irrigated acreage overlying the basin or subbasin
6. Degree to which persons overlying the basin or subbasin rely on groundwater as their primary source of water
7. Any documented impacts on the groundwater within the basin or subbasin, including overdraft, subsidence, saline intrusion, and other water quality degradation
8. Any other information determined to be relevant by DWR

The Santa Clara Subbasin (2-009.02) and Llagas Area Subbasin (3-003.01) underlie the Program Renewal Area. Both of these subbasins are designated as high priority under CASGEM and DWR's basin prioritization (DWR 2024).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) became law in 2015 and created a legal and policy framework to manage groundwater sustainably at a local level. SGMA allows local agencies to customize groundwater sustainability plans (GSPs) to their regional economic and environmental conditions and needs and establish new governance structures, known as groundwater sustainability agencies (GSAs). SGMA requires that GSAs develop GSPs or prescribed alternatives for groundwater basins designated as high and medium priority by DWR. GSPs are intended to facilitate the management of groundwater supply and use in a manner that avoids specific undesirable results. Undesirable results are defined as the following:

- Chronic lowering of groundwater levels (not including overdraft during a drought if a basin is otherwise managed);
- Significant and unreasonable reduction of groundwater storage;
- Significant and unreasonable seawater intrusion;
- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies;
- Significant and unreasonable land subsidence that substantially interferes with surface land uses; and

- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

GSPs are required to include measurable objectives and minimum thresholds, as well as interim milestones in 5-year increments, to achieve the sustainability goal for the basin for the long-term beneficial uses of groundwater. Additionally, GSPs are required to include components related to groundwater quality monitoring, the monitoring and management of groundwater levels within the basin, mitigation of overdraft, and a description of surface water supply used or available for use for groundwater recharge or in-lieu use.

Valley Water is the GSA for the Santa Clara Subbasin (2-009.02) and Llagas Area Subbasin (3-003.01), which underlie the Program Renewal Area. Valley Water has developed a Groundwater Management Plan (GWMP), which serves as an Alternative to a GSP, as discussed further below.

Regional Plans, Policies, Regulations, and Ordinances

Valley Water's Water Resources Protection Ordinance 06-1

Valley Water manages water resources under Water Resource Protection Ordinance 06-1. This ordinance protects water resources managed by Valley Water by regulating modifications, entry, use or access to Valley Water facilities and/or Valley Water easements. The ordinance clarifies the governance of lands along and adjacent to streams, provides model Guidelines and Standards for management of these lands, and reinforces the role of local jurisdictions in regulating land use, but encouraging consultation with Valley Water regarding lands they manage.

In an effort to clarify and streamline local permitting for streamside activities, representatives from Valley Water, cities, the County, and business, agriculture, streamside property owner, and environmental interests created a partnership known as the Water Resources Protection Collaborative. Together the collaborative developed a manual of model guidelines and standards for land-use near streams.

Valley Water's Groundwater Management Plan for the Santa Clara and Llagas Subbasins

Valley Water's 2016 GWMP for the Santa Clara and Llagas Subbasins was submitted to and approved by DWR as an Alternative to a GSP. Valley Water subsequently submitted the 2021 GWMP to DWR in accordance with the periodic evaluation for the approved Alternative – and it was approved by DWR in 2024. The 2021 GWMP supersedes all previous GWMPs and is the current version in effect. The GWMP describes Valley Water's comprehensive groundwater management framework, including existing and potential actions to achieve basin sustainability goals and ensure continued sustainable groundwater management. The GWMP includes the following sustainability goals related to groundwater supply reliability and protection (Valley Water 2021):

- Manage groundwater to ensure sustainable supplies and avoid land subsidence.
- Aggressively protect groundwater from the threat of contamination.

These goals describe the overall objectives of Valley Water's groundwater management programs. The GWMP then includes basin management strategies to meet the sustainability goals. Many of the strategies have overlapping benefits, acting to improve water supply

reliability, minimize subsidence, and protect or improve groundwater quality, as follows (Valley Water 2021):

1. Manage groundwater in conjunction with surface water.
2. Implement programs to protect and promote groundwater quality.
3. Maintain and develop adequate groundwater models and monitoring networks.
4. Work with regulatory and land use agencies to protect recharge areas, promote natural recharge, and prevent groundwater contamination.

Finally, the GWMP includes sustainability indicators and outcome measures to gauge performance in meeting the basin sustainability goals, as shown in **Table 3.9-1** below (based on Table ES-1 in the GWMP).

Table 3.9-1. Groundwater Management Plan Outcome Measures and Outcome Measure – Lower Thresholds

Sustainability Indicator	Outcome Measure	Outcome Measure – Lower Threshold
Groundwater Storage	Projected end of year groundwater storage is greater than 278,000 AF in the Santa Clara Plain, 5,000 AF in the Coyote Valley, and 17,000 AF in the Llagas Subbasin.	Projected end of year countywide groundwater storage is greater than Stage 5 (150,000 AF) of the Water Shortage Contingency Plan.
Subsidence	Groundwater levels are above subsidence thresholds at the Santa Clara Plain subsidence index wells.	Groundwater levels are above the historical low water levels at the majority of the Santa Clara Subbasin subsidence index wells.
Groundwater Quality	For Santa Clara Subbasin water supply wells, at least 95% meet primary drinking water standards, and at least 90% have stable or decreasing trends for total dissolved solids (TDS).	At least 70% of water supply wells have stable or decreasing trends for nitrate and TDS.
Groundwater Quality	For Llagas Subbasin water supply wells, at least 95% meet primary drinking water standards, and at least 90% of wells have stable or decreasing trends for TDS.	At least 70% of water supply wells have stable or decreasing trends for nitrate and TDS.
Seawater Intrusion	In the Santa Clara Subbasin shallow aquifer, the 100 milligram per liter isocontour areas is less than the historical maximum extent area (57 square miles).	In the Santa Clara Subbasin shallow aquifer, the 100 milligram per liter chloride isocontour area is less than 81 square miles, which represents a one-mile radial buffer of the historical maximum extent area.

Notes: Based on Table ES-1 in the GWMP (Valley Water 2021).
AF = acre-feet; TDS = total dissolved solids

Source: Valley Water 2021

3.9.3 Environmental Setting

Climate and Hydrology

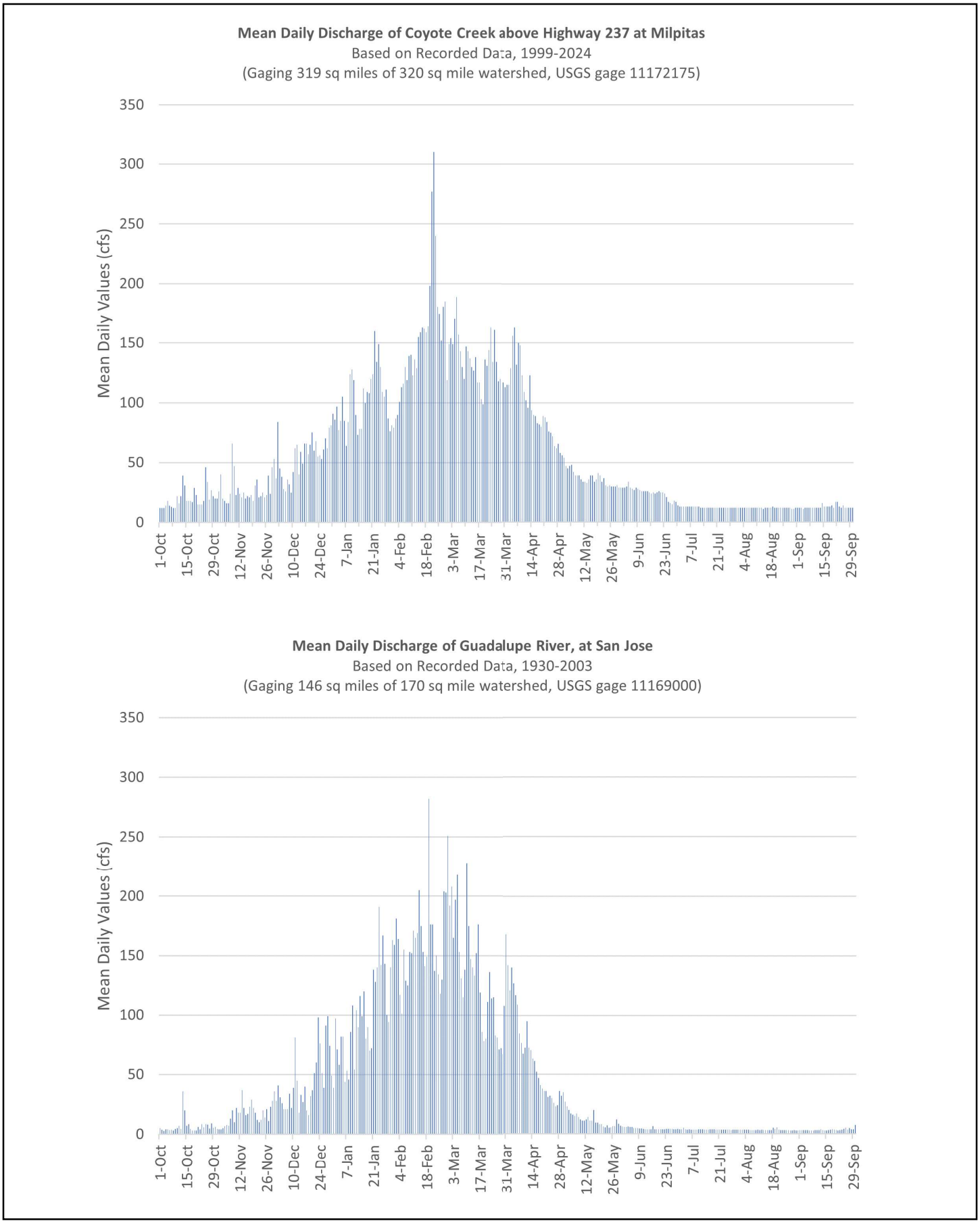
Surface water hydrology (primarily runoff and stream flow) is largely a function of climate, land cover, and soil. In much of California, including Santa Clara County, surface hydrology also is influenced by water resources management that may capture, store, release, or transfer surface water across or between watersheds. The Program Renewal Area experiences a Mediterranean climate, characterized by warm, dry summers and cool, wet winters. Precipitation is mainly concentrated in the winter months and falls primarily as rain, though the high elevations of the Santa Cruz Mountains and Diablo Range can receive limited snowfall. Weather in the region is subject to high annual variability as well as longer-term climatic cycles, including the Pacific-North American Oscillation, the El Niño Southern Oscillation, and the Pacific Decadal Oscillation (Andrews et al. 2004:337–348). These cycles affect temperature, precipitation, and the frequency of extreme weather events.

The Santa Cruz Mountains area receives the highest average rainfall totals in the county, ranging from 30 to 50 inches per year. Whereas the Diablo Range in the eastern Program Renewal Area receives substantially less average rainfall than the Santa Cruz Mountains, ranging from 20 to 32 inches, caused by a "rain shadow" effect as fronts move from the ocean over ranges toward the interior.

Rainfall, land cover, soil structure, soil moisture, slope, watershed size, reservoir operations, and other factors all influence the magnitude and duration of flows (or discharge) in rivers and streams in the Program Renewal Area. Urbanized lands with a higher proportion of impervious surfaces and reduced infiltration generally demonstrate a rapid runoff response to rainfall events. Such "flashy" hydrologic systems are noted for the short lag-times between rainfall and peak discharge and show very steep (needle-like) rising limbs of storm hydrographs[1]. Unregulated streams (i.e., those without water supply reservoirs, or located above impoundments) also may show more rapid runoff response compared to streams that have structural features that provide runoff retention or detention. Although typically unregulated, streams tend also to be surrounded by land uses that have higher rates of infiltration, reducing the amount of runoff.

Many of the streams in the Program Renewal Area are downstream of dams, and flows on these streams are regulated by these dams for water supply purposes. On regulated creek systems, peak discharges are reduced, the frequency/duration relationships are more equitable (less extreme), and base flow discharge (non-storm flow) typically extends into the later spring, summer, and fall months compared to non-regulated streams. Also, several of the reservoirs in the Program Renewal Area release flow through the summer months to recharge groundwater aquifers. **Figures 3.9-1a, 3.9-1b, 3.9-2, and 3.9-3** show streamflow data for representative streams within the Program Renewal Area.

[1] A hydrograph is a graph or measure of stream flow over time, typically with discharge plotted along the vertical axis and time charted along the horizontal axis.



Source: USGS Water Data, 2024

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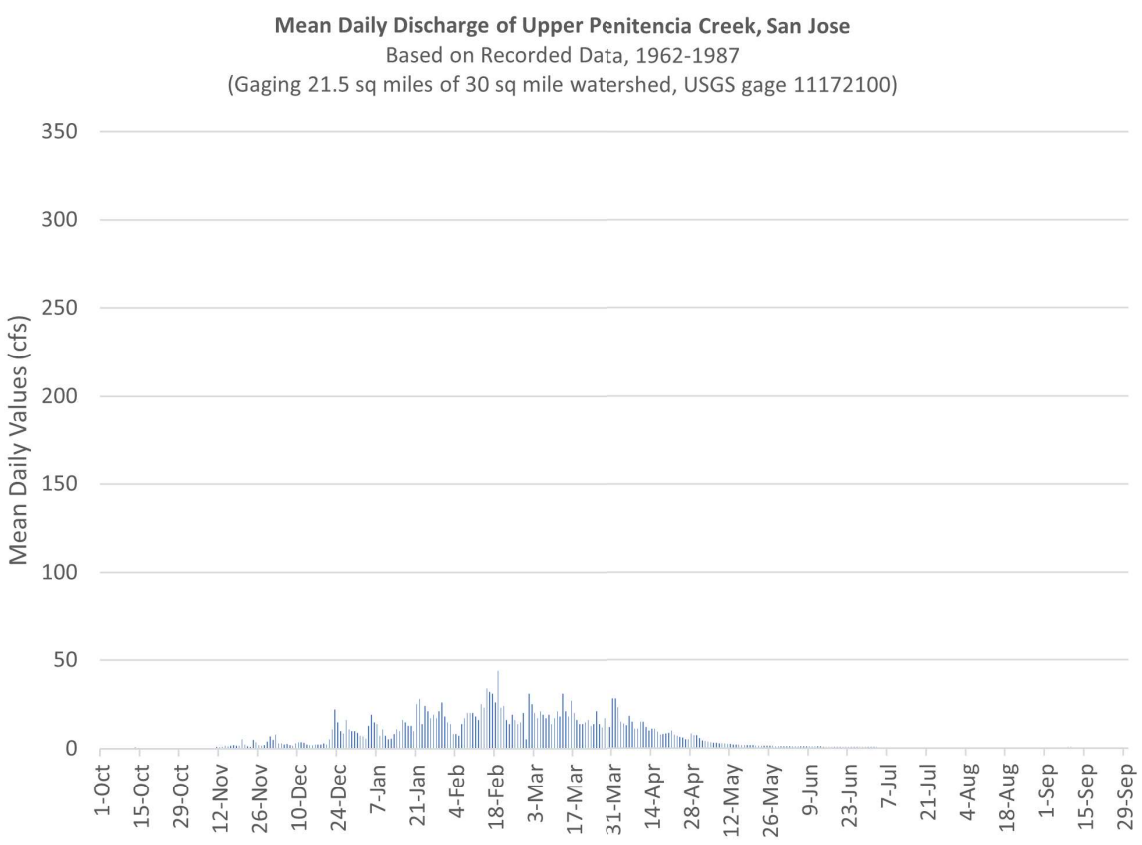
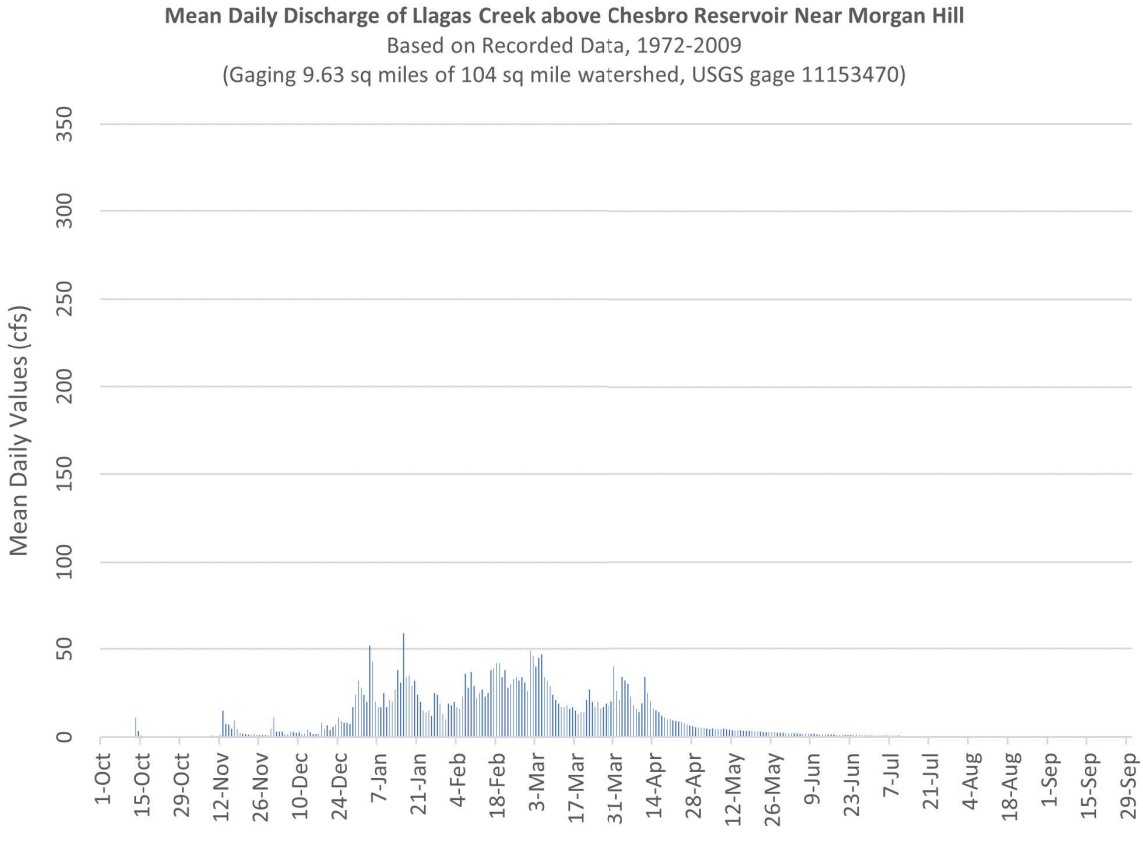
Figure 3.9-1a
Representative Hydrographs from Program Renewal Area Watersheds





Source: USGS Water Data, 2024

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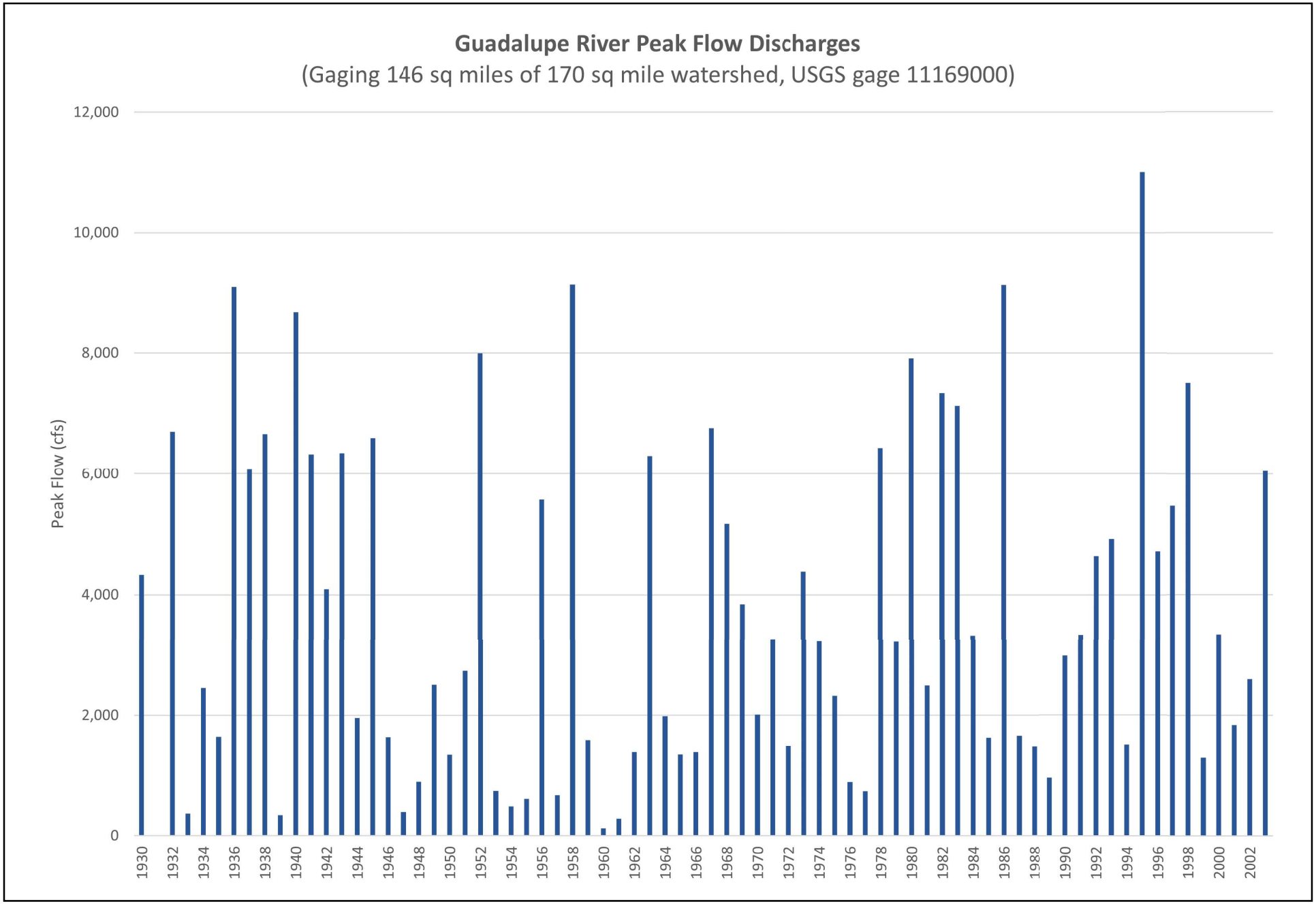
Figure 3.9-1b
Representative Hydrographs from Program Renewal Area Watersheds



Source: USGS Water Data, 2024

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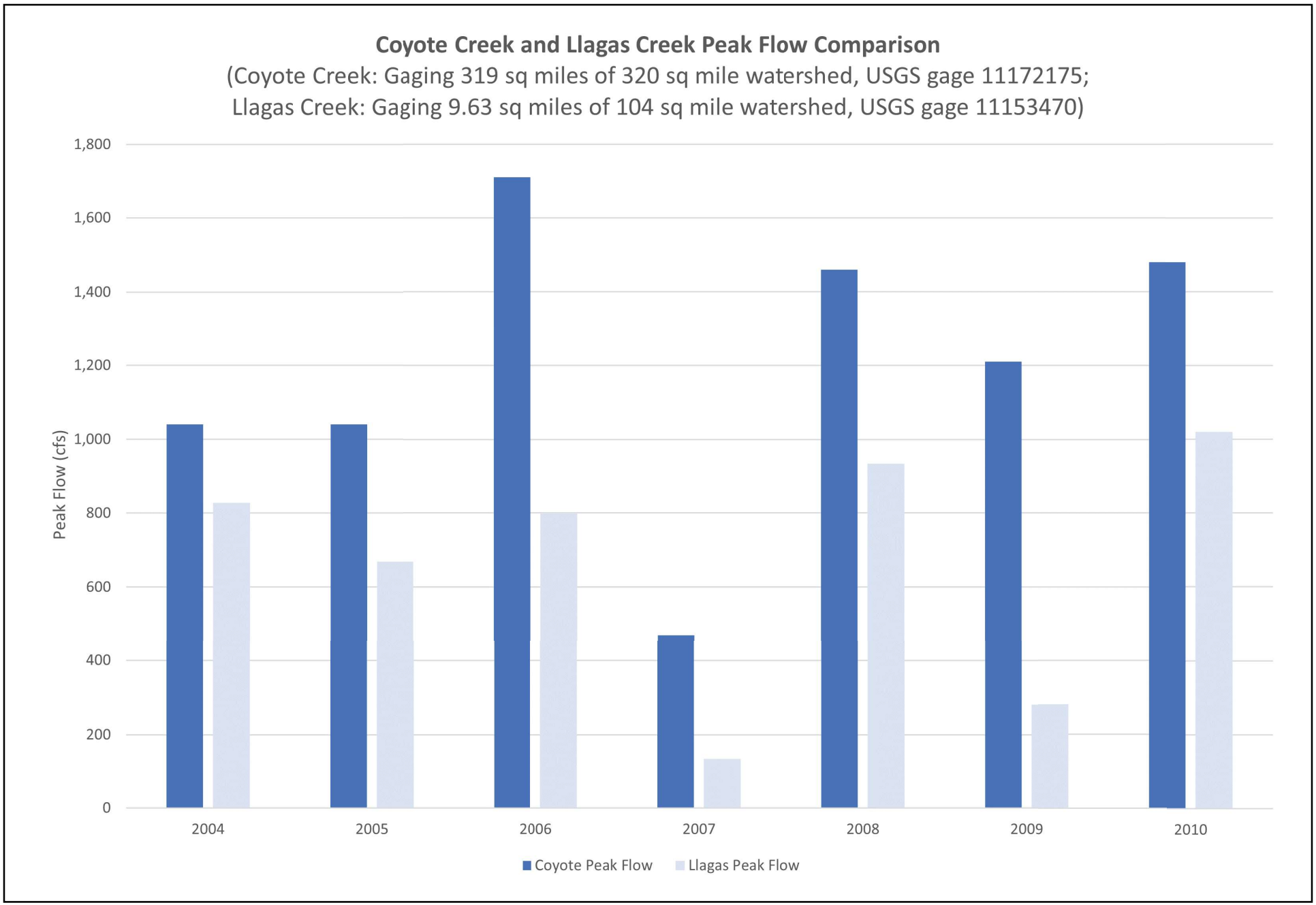
Figure 3.9-2
Guadalupe River Peak Flow Discharges



Source: USGS Water Data, 2024

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Figure 3.9-3
Comparison of Peak Flows-Coyote Creek and Llagas Creek

Geology and Geomorphology

Many factors influence the geomorphology of rivers and streams, including geology, hydrology, climate, land use, and vegetation. With respect to the regional geology, Santa Clara County is situated in the Central Coast Range province of California. The Central Coast Range is characterized by its northwest-southeast trending mountain ranges. Typically, the ranges are separated by structural depressions (valleys) that fill with alluvium (stream transported sediment) derived from the adjacent ranges. Most often, the alluvial valleys contain a primary or "trunk" stream that collects runoff and sediment from the side valley tributary streams (generally to the east and west) that ascend higher in the contributing watershed toward the ridgelines.

This general pattern holds true in Santa Clara County, with the Santa Cruz Mountains to the west and the southern Diablo Range to the east. These two ranges frame the Santa Clara Basin below, which drains to San Francisco Bay. In the southern Program Renewal Area, the Gilroy Valley of the Pajaro Watershed serves as the central alluvial valley between the Santa Cruz Mountains and Diablo Ranges. The Pajaro Watershed drains to Monterey Bay. The ridge-valley structure of Santa Clara County presents a three-part continuum of geomorphic conditions, with crystalline or bedrock areas in the upper watersheds, transitioning to foothill alluvial fans, then to lower watershed bays and alluvial plains. These geomorphic zones are described below, following Helley et al. (1979) and Valley Water (2022).

Bedrock Uplands

Bedrock uplands form the steep, mountainous headwater terrain of the principal drainages in the Program Renewal Area. In the western Program Renewal Area (see **Figure 2-1** in Chapter 2, *Project Description*), the eastern slopes of the Santa Cruz Mountains form the headwaters of many Program Renewal Area waterways, including San Francisquito Creek, Adobe Creek, and the Guadalupe River. The underlying bedrock geology in this region is commonly the Franciscan Complex, a formation of compressed, uplifted, and rotated marine sedimentary materials that was deposited in the early Cretaceous Period (approximately 146 to 100 million years ago) (Norris and Webb 1990; Sullivan and Galehouse 1991). Locally, younger Mesozoic meta-sedimentary and volcanic rocks with smaller quantities of Tertiary sandstones, siltstones, and mudstones are exposed (PWA 2002). In the eastern Program Renewal Area, elevations in the Diablo Range vary from 500 to 2,800 feet above mean sea level, with slopes similar to those on the eastern Santa Cruz Mountains (Valley Water 2001). In addition to the Franciscan Complex geology, the Diablo Range includes the characteristic sandstone and mudstone depositional layers of the Great Valley Sequence.

Stream channels in bedrock upland areas are steep and often flow through deeply incised valleys with little or no floodplain area. In several drainages (e.g., Coyote, Alamitos, Guadalupe, and Los Gatos Creeks), the existence of reservoirs has effectively reduced the delivery of coarse sediment from the watershed uplands to the alluvial fans/plains below. The fine material (typically finer material and washload held in suspension) that is not trapped by reservoirs is transported downstream and can collect and deposit in the stream channels of the Program Renewal Area (SCVURPPP 2019).

Foothill Alluvial Fans

The foothill alluvial fans in the Program Renewal Area are found downstream of the bedrock uplands and provide a topographic transition to the alluvial plains further downstream in the

watershed. Alluvial fans collect stored sediment, much of it coarse gravel and sand. In the Coast Ranges, alluvial fans are typically geologically young depositional landforms from the Quaternary Period (the last 1.8 million years). Although depositional when viewed through longer geologic time scales, in the short term, present-day alluvial fans can function variably as zones of sediment erosion, sediment transport, or sediment deposition. Many of the current alluvial fan channels in the Program Renewal Area, particularly in the upper fan zones, are incising and transporting coarse sediments downstream (PWA 2019). Gullying and headward erosion through the alluvial fans in many instances have been caused or exacerbated by historic land use practices, development encroachment on stream corridors, and the channelization of streams that have essentially fixed their locations. Where streambanks have been artificially steepened, rotational slumps (the movement of a mass of soil and rock downslope and rotating) and other slope failures can occur (Valley Water 2001).

Bay Plain and Alluvial Valleys

The floodplains and alluvial valleys situated between the foothills and San Francisco Bay are formed of relatively young sedimentary deposits, dating from the Holocene epoch of the last 10,000 years. Sediment grain sizes are coarsest near the foothills and alluvial fans and become finer moving downstream toward San Francisco and Monterey Bays. Whereas upper alluvial fans may slope up to a 5 percent gradient, in the lower plain regions stream slopes typically are less than 1 percent. The lower bay plain is composed of medium to fine grained alluvium and estuarine deposits. Many of these deposits were laid during estuarine backwater flooding conditions when winter stream flows met high tides (PWA 2002). Near the margins of San Francisco Bay, estuarine sediments intergrade with fine alluvium in the deltas of Valley Water-maintained streams; extensive areas of artificial fill and diked baylands also are found.

Program Renewal Area Watersheds and Streams

The Program Renewal Area includes two primary watersheds: the Santa Clara Basin and the Pajaro Basin. For the purposes of resource management, Valley Water has divided the Santa Clara Basin further into four watershed management areas (WMA): Lower Peninsula, West Valley, Guadalupe, and Coyote WMAs. The Pajaro Basin includes the Uvas-Llagas WMA. These watersheds and WMAs are discussed further below.

In Chapter 2, *Project Description,* Figure 2-1 shows the Program Renewal Area, including the Santa Clara Basin and Pajaro Basin. **Figures 2-2 through 2-6** shows each of the WMAs within the Program Renewal Area in more detail, including the channel type distribution (i.e., modified, unmodified, unknown) within the WMA. Additionally, **Figure 3.9-4** below shows an overview of the watersheds and WMAs. Finally, **Table 3.9.2** in this section provides a summary of the main creeks and their drainages in each WMA.

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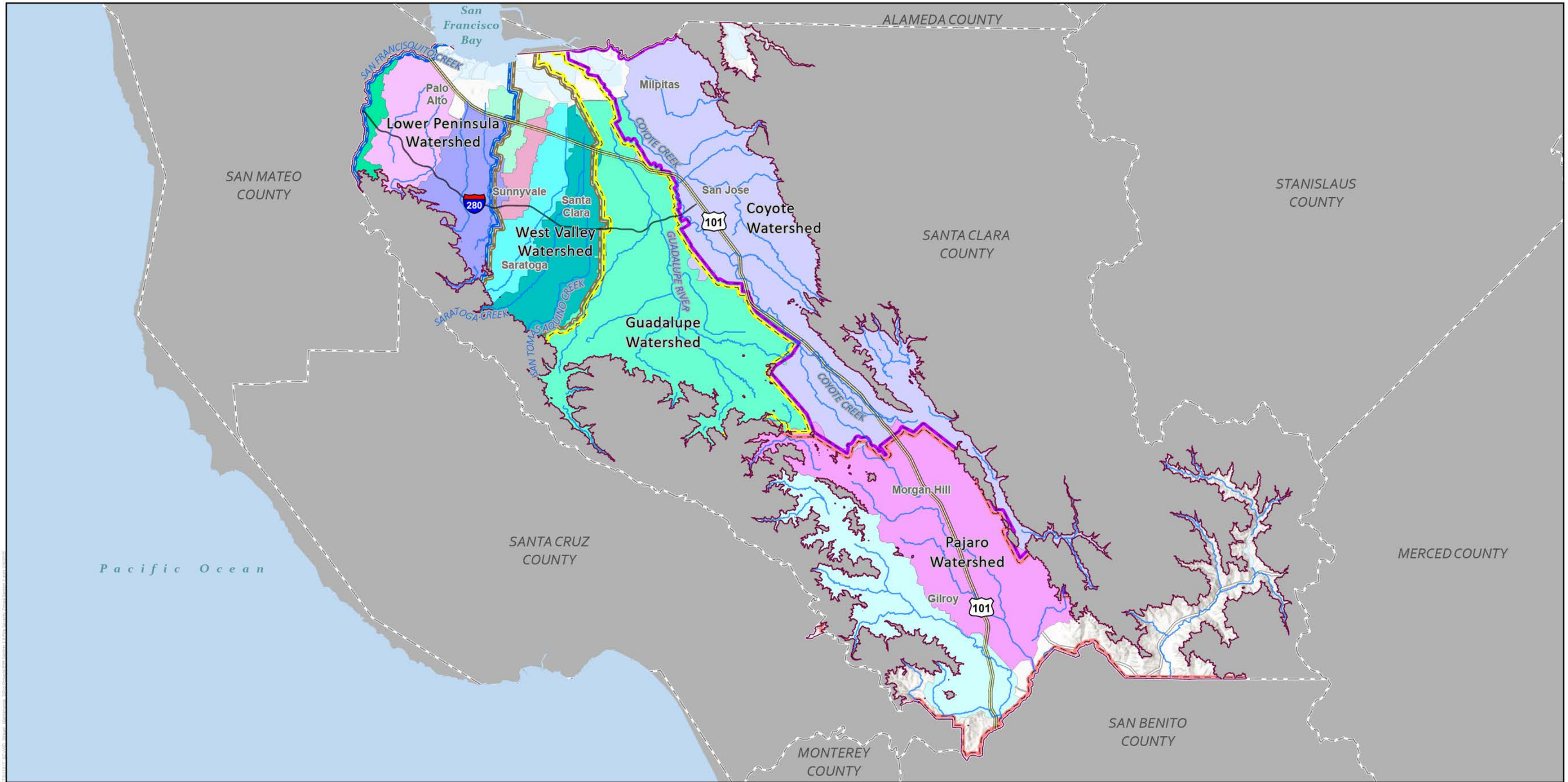

Figure 3.9-4
Watersheds and Surface Waters

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

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Source: SCVWD GIS Web Services, https://gis.valleywater.org/arcgis/services
GIS Services, https://mapservices.sccgov.org/arcgis/rest/services

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Table 3.9-2. Principal Creeks in Program Renewal Area Watersheds

Creek or Channel	Drainage Area (square miles)	Channel Length (approx. miles)	Main Tributaries
Santa Clara Basin			
Lower Peninsula Watershed			
Adobe Creek	10	NP	Purissima Creek
Barron Creek	3	NP	N/A
Matadero Creek	14	NP	Deer Creek; Stanford Channel
Permanente Creek	17	13	Hale Creek
San Francisquito Creek	45	12.5	Los Trancos Creek
Stevens Creek	29	19	Permanente Creek Diversion; Heney Creek
West Valley Watershed			
Calabazas Creek	17	13.3	Prospect, Rodeo, and Regnart Creeks; El Camino Storm Drain
San Tomas Aquino Creek	22	16	Saratoga, Smith, Vasona, and Wildcat Creeks
Saratoga Creek	17	15	N/A
Sunnyvale West Channel	7.5	3	N/A
Sunnyvale East Channel	7.1	6	N/A
Guadalupe Watershed			
Alamitos Creek	37	8.5	Golf, Greystone, Randol, Calero and Herbert Creeks; Jacques Gulch; and Barrett Canyon
Guadalupe Creek	15.2	NP	Shannon, Pheasant, and Hicks Creeks
Los Gatos Creek	51	NP	Limekiln Canyon, Soda Spring, Aldercroft, Black, Briggs, and Hendrys Creeks; Moody Gulch
Guadalupe River	170	NP	Alamitos, Guadalupe, Ross, Canoas, and Los Gatos Creeks
Coyote Watershed			
Coyote Creek	320	42	Fisher, Upper Silver, Lower Silver, and Upper Penitencia Creeks, and other creeks tributary to the two reservoirs on Coyote Creek
Lower Penitencia Creek	30	NP	East Penitencia Channel and Berryessa Creek

Creek or Channel	Drainage Area (square miles)	Channel Length (approx. miles)	Main Tributaries
Pajaro Basin			
Uvas-Llagas Watershed			
Pajaro River	104	NP	Pacheco, Llagas, and Uvas-Carnadero Creeks

Notes: N/A – not applicable, NP – not provided

Sources: SCBWMI 2003, Pajaro Valley Water Management Agency (PVWMA) et al. 2019, WMI 2007

Santa Clara Basin

The Santa Clara Basin includes approximately half of Santa Clara County and small parts of San Mateo and Alameda Counties (Figure 2-1). The Santa Clara Basin consists of San Francisco Bay south of the Dumbarton Bridge and the 824 square miles that drain, generally in a northerly direction, to the Bay. The Diablo Range and the Santa Cruz Mountains form the eastern, western, and southern basin boundaries. Land uses within the Santa Clara Basin range from residential, commercial, and industrial uses in the northern portion of the basin to a primarily rural southern portion with cattle ranching, water-supply catchments, and scattered low-density residential development (Santa Clara Basin Watershed Management Initiative [SCBWMI] 2003). As noted above, Valley Water has subdivided the Santa Clara Basin into four WMAs, each of which is discussed further below.

Lower Peninsula WMA

The Lower Peninsula WMA (98 square miles) is located in the northwest portion of the Santa Clara Basin (Figures 2-1 and 2-2, and Figure 3.9-4). The Lower Peninsula headwaters begin in the Santa Cruz Mountains at elevations greater than 2,500 feet. Tributary creeks fall steeply from the headwaters region to the more gently sloping alluvial fans and plains. Major streams under Valley Water's management within the Lower Peninsula WMA include San Francisquito, Stevens, Permanente, Adobe, Barron, and Matadero creeks (WMI 2007). These streams generally flow northward, conveying flows to the Palo Alto Flood Basin and, ultimately, San Francisco Bay. However, portions of Buckeye, Adobe, Permanente, and Stevens creeks flow more easterly/westerly, where their stream valleys follow the San Andreas Fault Zone, which disrupts their drainage pattern (Figure 2-2). As shown in Figure 2-2, the vast majority of the lengths of streams within the Lower Peninsula WMA (particularly the portions passing through urbanized areas closer to the Bay) are modified channels.

San Francisquito Creek marks the border between Santa Clara and San Mateo counties. Valley Water only maintains the side of the creek that is within Santa Clara County. Up to 1,500 cfs of runoff in Permanente Creek may be diverted to Stevens Creek via the Permanente Creek Diversion (Figure 2-2), built in 1959. During storm events, high flows from Barron Creek may be diverted to Matadero Creek via the Barron Creek Bypass structure. Valley Water manages

Stevens Creek Reservoir (3,465 acre-feet), the largest reservoir in the Lower Peninsula WMA, for water supply storage purposes with incidental flood protection benefits[2].

Land uses in the Lower Peninsula WMA generally consist of open space and low-density residential development in the upper watershed, with higher density residential and commercial development on the valley floor. Municipalities that are partially or entirely with the WMA include Los Altos Hills, Palo Alto, Mountain View, Los Altos, Cupertino, and Sunnyvale. A large quarry is located in the upper Permanente Watershed and mines limestone for cement production.

West Valley WMA

The West Valley WMA (85 square miles) is situated southeast of the Lower Peninsula WMA and northwest of the Guadalupe WMA (Figures 2-1 and 2-3, and Figure 3.9-4). The major natural drainages in this WMA are Calabazas, San Tomas Aquino, and Saratoga creeks. These streams begin as natural channels at relatively low elevations in the Santa Cruz Mountains (less than 1,500 feet) (WMI 2007). As these streams transition from the alluvial fan regions to the Bay plain, they become highly modified channels that traverse the Bay plain and ultimately discharge to Guadalupe Slough. The Sunnyvale West and East Channels, constructed channels that provide drainage for large portions of Sunnyvale, also discharge to Guadalupe Slough. Figure 2-3 shows that the vast majority of stream lengths in the West Valley WMA are modified channels.

Like much of the western Santa Clara Basin, land use in the upper West Valley WMA is primarily forest or undeveloped rangeland with low-density residential development, while the lower watershed is highly developed for residential and commercial uses. However, within the Calabazas drainage, several areas of heavy industry are present in the upper watershed. Municipalities that are partially or entirely within this WMA include Sunnyvale, Santa Clara, Cupertino, San Jose, Santa Clara, Campbell, Monte Sereno, Los Gatos, and Saratoga (SCBWMI 2003).

Guadalupe WMA

The Guadalupe WMA (Figures 2-1 and 2-4, and Figure 3.9-4) drains approximately 170 square miles, beginning in the eastern Santa Cruz Mountains near the summit of Loma Prieta (3,790 feet above mean sea level) and eventually discharging to San Francisco Bay via Alviso Slough. The Guadalupe River, the largest drainage in the watershed, begins at the confluence of Alamitos and Guadalupe creeks and flows north through heavily urbanized portions of San Jose and Santa Clara to Alviso Slough. Alamitos Creek flows northwesterly to Almaden Reservoir (2,000 acre-feet), and then flows northerly to its confluence with Calero Creek, and eventually to its confluence with Guadalupe Creek. Three main tributaries, Ross, Canoas, and Los Gatos creeks, join the Guadalupe River on the Bay plain as it flows north towards the Bay. As shown on Figure 2-4, the vast majority of the stream lengths within the Guadalupe WMA are modified channels.

Valley Water operates five reservoirs in the Guadalupe WMA for water supply storage purposes (with incidental flood protection benefits): Guadalupe, Calero, Almaden, Lexington,

[2] Valley Water does not conduct maintenance activities at reservoirs or dams as part of its Stream Maintenance Program. However, stream maintenance at the reservoir outfall below the dam is included, as is any necessary stream maintenance upstream of the reservoir (below the 1,000-foot contour).

and Vasona Reservoirs. Municipalities that are partially or entirely within this WMA include Campbell, Santa Clara, Los Gatos, Monte Sereno, and San Jose.

Coyote WMA

The Coyote WMA is the largest watershed in the Santa Clara Basin, encompassing over 320 square miles (Figures 2-1 and 2-5, and Figure 3.9-4). The Coyote WMA drains the west-facing slopes of the Diablo Range that lie within the Santa Clara Basin. The eastern and southern portions of the watershed are upland areas with elevations up to 4,000 feet above mean sea level; the northern and western portions encompass the valley floor. Coyote Creek is the principal drainage in the watershed; 29 major tributaries drain into Coyote Creek including Upper Penitencia Creek, Berryessa Creek, Lower Silver Creek, and Fisher Creek (SCVWD 2001). Streams in the watershed generally drain in a northwesterly direction to San Francisco Bay. As shown on Figure 2-5, unlike other WMAs in the Santa Clara Basin, most of the stream miles within the Coyote WMA are unmodified channels.

Coyote and Anderson reservoirs (22,925 and 89,073 acre-feet, respectively) capture runoff from the upper Coyote WMA and areas beyond the WMA boundaries. Anderson Reservoir's purpose is to facilitate groundwater recharge in the Santa Clara Valley groundwater basin, provide emergency water supply, and provide flood protection (PVWMA et al. 2007). Flows in the lower watershed are highly regulated by these reservoirs, which are managed largely for groundwater recharge. The Hayward and Calaveras faults are major potentially active earthquake faults that cross the watershed. The upper Coyote WMA includes unincorporated, predominantly agricultural areas. The entire city of Milpitas and portions of San Jose and Morgan Hill lie within the WMA boundaries (SCVWD 2001).

Pajaro Watershed

The Pajaro Watershed is one of the Central Coast's largest watersheds and is well-known for its world-class agricultural soils and powerful flooding characteristics (DWR 2009). Most of the watershed is mountainous or hilly, with level lands confined to the floodplains of Pajaro River and its tributaries (Central Coast RWQCB 2005). Unlike streams of the Santa Clara Basin, the Pajaro River drains directly to the Pacific Ocean, near the geographic center of Monterey Bay.

Major sub-watersheds within the Pajaro River Basin include the San Benito River and Tres Pinos, Uvas, Llagas, and Corralitos creeks, of which Uvas and Llagas creeks are within the Program Renewal Area (Figure 2-1). Agriculture has long been the dominant land use in the watershed and is a major source of nutrients and sediment loading to the Pajaro River. However, in recent years, substantial portions of the upper watershed area have been developed into residential subdivisions. In addition to residential and agricultural uses, historic mercury mining activities occurred in the Hernandez Lake area and gravel mining occurred along Pajaro and San Benito rivers (Central Coast RWQCB 2005).

Pajaro WMA

The Pajaro WMA is located within San Benito, Santa Clara, Santa Cruz, and Monterey counties and encompasses approximately 1,300 square miles (Figures 2-1 and 2-6, and Figure 3.9-4) (PVWMA et al. 2007). As noted above, Uvas and Llagas creeks lie within the Pajaro WMA, while the Pajaro River itself forms the southern boundary of the WMA. Uvas and Llagas creeks originate in the mountains to the west and flow in a generally south-southeastern direction

before joining the Pajaro River. Pacheco Creek is also within the WMA in the eastern portion (see Figure 2-1). As shown in Figure 2-6, the majority of stream miles in the Pajaro WMA are unmodified.

Major reservoirs in the Pajaro WMA include the Chesbro and Uvas reservoirs. Chesbro Reservoir discharges to Llagas Creek, and Uvas Reservoir discharges to Uvas Creek. Anderson Reservoir discharges to Coyote Creek, outside of the Pajaro Watershed, but was historically connected to the Pajaro River Basin via a pipeline. The purpose of Chesbro and Uvas reservoirs is to facilitate groundwater recharge in the Gilroy–Hollister groundwater basin (Chesbro Reservoir also is managed for flood protection). Municipalities that are partially or entirely within this WMA include San Jose, Morgan Hill, and Gilroy.

Channel Types and Drainage Features

As discussed in Chapter 2, *Project Description,* all Program Renewal maintenance activities would take place in channels below the 1,000-foot elevation contour. Within this zone, channels can be categorized into two broad types: modified and unmodified. In the simplest terms, modified channels are those that have been substantially altered from historical conditions. Some modified channels have had capital improvement projects (CIPs), while others were constructed in conjunction with land development projects or to maximize developable land adjacent to a creek. Most modified channels have established design flow conveyance criteria and will be maintained to those criteria. However, many modified channels were not built according to an engineered design with established design flow conveyance criteria.

By contrast, unmodified channels have not been substantially altered through human intervention (to Valley Water's knowledge) and are generally similar in form and location to the channel under historic conditions. Unmodified channels may have small areas of modification, including bridges, outfalls, culverts, gauges, or other appurtenant structures. Unmodified channels are usually in areas without other types of flood protection measures and generally occur in the foothills or higher elevations of the Program Renewal Area.

Refer to Chapter 2 for the full descriptions of modified and unmodified channel types. Representative photographs of the modified and unmodified channel types are provided in Figures 2-7 and 2-8. Beyond these broader types, channel types can be further broken down. Specifically, four primary channel types are found in which maintenance may occur: natural or mixed channels on alluvial fans, mixed or concrete tributary channels on the Bay plain, mixed or concrete mainstem channels on the Bay plain, and tidally influenced channels. An overview of each of these channel types is described next; proposed maintenance activities related to channel morphology also are discussed.

Type 1: Natural or mixed channels on alluvial fans

As streams transition from headwaters and canyons in the bedrock uplands to the foothill alluvial fans, channel slopes decrease, and channel widths generally increase. As a result, sediment transport capacity decreases and bedload deposition increases. Unmanaged, sediment deposition in Valley Water-maintained channels reduces flow conveyance capacity, resulting in increased flooding risks. Consequently, under the existing Stream Maintenance Program (SMP-2), Valley Water actively maintains channel capacity by removing accumulated sediment and managing vegetation (to control hydraulic roughness), and it would continue to do so under the Program Renewal. Under the existing SMP-2, these

maintenance activities have occurred on numerous creeks throughout the foothills region, including streams such as Permanente, Calabazas, Penitencia, and Alamitos creeks, and such maintenance would continue under the Program Renewal.

Type 2: Mixed or concrete tributary channels on the Bay plain

This stream type includes the small to medium sized channels on the Bay plain that are tributary to the main streams that discharge to the Bay. Some of these channels have been engineered and straightened for flood protection and land development purposes, while others remain in a more natural state. Most of these drainages have seasonal stream flows, unless fed by artificial drainage (e.g., golf courses) or dam releases.

Channels on the Bay plain are depositional under natural conditions. Historical modifications to these channels, such as expanding cross-sectional areas for flood protection, often increase the rate of sedimentation. In-channel structures (such as weirs, bridges and culverts that control stream grade or alter hydraulics) also may influence sediment transport capacity and depositional patterns in these channels. Valley Water actively maintains channel capacity by removing accumulated sediment and managing vegetation. Streambank protection also is common in this channel type.

Type 3: Mixed or concrete mainstem channels on the Bay plain

This channel type includes the major drainages on the valley floor, such as the lower reaches of Adobe, Permanente, Stevens, Calabazas, San Tomas Aquino, and Coyote creeks, the Guadalupe River, and Sunnyvale East and West channels. **Figure 2-9** provides a diagrammatical cross section of this channel type.

Similar to the tributary channels, the main drainages on the Bay plain are depositional under natural conditions. Channelization and channel modification activities that have straightened, widened, and deepened these stream channels have further supported depositional processes. Valley Water has undertaken several CIPs that were intended to reduce the need for ongoing sediment management by restoring the geomorphic function of these channels. This has involved construction of multistage channels and bypass features to more efficiently manage sediment discharge. Nevertheless, in many situations Valley Water must still actively maintain channel capacity by removing accumulated sediment. Bank stabilization, vegetation management, and streambank protection activities also are common in this channel type.

Type 4: Tidally Influenced channels

The delta (river to estuary interface) portions of the Type 3 channels described above are tidally influenced. The channels in this region are typical of brackish tidal sloughs with wide and shallow cross sections and tall emergent vegetation on the channel margins. Substrate is generally poorly consolidated, fine-textured marine and alluvial sediment. Program Renewal maintenance activities in this channel type generally would include bank stabilization, sediment removal, and vegetation management.

Stream Dynamics and Sediment Balance

In general, the flood protection channel network is a depositional environment and sediment accumulates over time. This applies especially to modified channels that are lower in the

watershed; however, unmodified channel reaches may also be net depositional due to the factors discussed below.

The cause for this net depositional condition is primarily based on the flood management channels mostly being located in lower watershed locations that are naturally more depositional, as they receive sediment inputs from higher areas in the watershed. Additionally, because flood management channels contain flows up to their design magnitudes, the sediment in these flows is contained within the channel and does not go into overbank locations, except during floods that exceed the channel capacity. This results in the flood control channels accumulating sediment. In addition to this, land use practices and other watershed drainage modifications that have resulted in increased sediment transport to lower watershed locations have also exacerbated this situation. Historically, before development and channelization, the streams in the Program Renewal Area periodically overtopped their banks and deposited sediment onto the adjacent floodplain. Non-channelized streams also migrated across the floodplain, seeking the most efficient pathway downstream. These pre-channelization geomorphic processes can be reviewed in standard geomorphic texts such as Dunne & Leopold (1978), Ritter (1986), or Mount (1995). Once flood protection channels were established in the Program Renewal Area to reduce overbank flooding, these channels lost their ability to spread and distribute sediments across adjacent floodplains. Upstream sediment sources, however, have not been reduced. The net result of these processes is that sediment is delivered to channels that are restricted from depositing and storing this sediment on their adjacent floodplains. The channels themselves have become the reservoirs for sediment storage. The baseline flood protection channel system is and will continue to be largely depositional and requires periodic sediment removal to help the streams' design flow conveyance capacities to be maintained.

With respect to the WMAs and streams discussed above, the stream reaches higher in the watershed areas are most likely to remain in an unmodified or "unknown" condition (see Figures 2-2 through 2-6). These reaches typically experience more variable flows based on their position at higher elevations and are more likely to serve as sediment sources (e.g., be net erosional). These stream reaches also are often not surrounded by substantial urban development. For unmodified stream reaches lower in the watershed (i.e., closer to the Bay), these reaches could be subject to the factors described above – and thus, be net depositional in nature. In particular, the unmodified streams within urban areas may still be constrained from depositing sediment in adjacent floodplains due to the nearby urban and suburban development.

Groundwater

The Program Renewal Area overlies two primary groundwater subbasins, as mapped by DWR (DWR 2024): the Santa Clara Valley Groundwater Basin, Santa Clara Subbasin (2-009.02) and the Gilroy–Hollister Valley Groundwater Basin, Llagas Area Subbasin (3-003.01). As noted above, both of these subbasins are designated high priority by DWR, pursuant to CASGEM and SGMA (DWR 2024).

The Santa Clara Subbasin underlies the northern portion of the Program Renewal Area and has an area of 153,600 acres (DWR 2004a). The subbasin is bounded by the Diablo Range on the west and the Santa Cruz Mountains on the east, extending from the northern border of Santa Clara County to the groundwater divide near the Town of Morgan Hill. Water bearing formations of the Santa Clara Subbasin include Pliocene to Holocene age continental deposits

of unconsolidated to semi-consolidated gravel, sand, silt, and clay (DWR 2004a). Natural recharge occurs principally as infiltration from streambeds that exit the upland areas within the drainage basin and from direct percolation of precipitation that falls on the basin floor. Additionally, Valley Water conducts an artificial (facility) recharge program that accounts for approximately 35 percent of total recharge in Valley Water's jurisdiction (DWR 2004a). Land subsidence has been a problem in the Santa Clara Subbasin in the past; however, groundwater levels have generally increased since 1965 as a result of increases in recharge and decreases in pumpage. The operational storage capacity of the Santa Clara Subbasin is estimated to be 350,000 acre-feet (AF) (DWR 2004a).

The Llagas Subbasin occupies a northwest trending structural depression to the southeast of the Santa Clara Subbasin, and in the southeastern portion of the Program Renewal Area. The basin is bounded on the east by the Diablo Range and on the west by the Santa Cruz Mountains, stretching from the groundwater divide at Cochrane Road near the City of Morgan Hill in the north to the Pajaro River in the south (DWR 2004b). The water bearing formations of the Llagas Subbasin include Pliocene to Holocene age continental deposits of unconsolidated to semi-consolidated gravel, sand, silt, and clay. These include the Santa Clara Formation and the valley fill materials (alluvial and alluvial fan deposits) which constitute the principal water producing formations (DWR 2004b). Recharge to the Llagas Subbasin occurs from a variety of sources: natural recharge from streams, principally Uvas and Llagas Creeks; percolation of precipitation and surplus irrigation waters; seepage along canals; subsurface inflow; and artificial recharge. Groundwater well monitoring has generally indicated that groundwater levels in the Llagas Subbasin have remained fairly stable over time. The operational storage capacity of the Llagas Subbasin is estimated at 150,000 AF (DWR 2004b).

Flooding

The Program Renewal Area is inclusive of all major streams within Valley Water's jurisdiction, and Program Renewal activities would generally take place within or adjacent to streams (i.e., within the floodplains). Depending on the specific characteristics of streams, the mapped FEMA flood hazard area of a given stream may be limited to the immediate channel (e.g., if a levee is protecting adjacent areas) or extend some distance laterally from the defined channel.

3.9.4 Impact Analysis

Methodology

The impact analysis baseline for this section is the existing conditions at the time of the May 2022 publication of the Notice of Preparation. The section evaluates potential impacts from the maintenance activities that would be implemented for the Program Renewal. In general, the maintenance activities would be a continuation of Valley Water's current SMP-2 practices, albeit with some modifications, as described in Chapter 2, *Project Description*.

Potential impacts to hydrology and geomorphology were evaluated based on a qualitative assessment of how the Program Renewal could affect hydrologic or geomorphic functions (e.g., runoff, erosion, sedimentation), considering implementation of Valley Water BMPs (see below). Alterations to flooding conditions also were considered, under the basic assumption

that stream maintenance activities would be intended to reduce flood risk. Potential short-term and long-term impacts of maintenance activities were considered.

Criteria for Determining Significance

For the purposes of this analysis, the Program Renewal would result in a significant impact on hydrology or geomorphology if it would:

A. substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

B. substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

   i. result in substantial erosion or siltation on- or off-site;

   ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

   iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems;

   iv. impede or redirect flood flows;

C. conflict with or obstruct implementation of a sustainable groundwater management plan.

Environmental Impacts

Impact HYD/GM-1: Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such that the Project May Impede Sustainable Groundwater Management of the Basin (Less than Significant)

The Program Renewal could use relatively minor amounts of groundwater (e.g., for dust control, equipment cleaning, mixing concrete). Given the region's dependence on groundwater for supply, it is likely that any water used during implementation of Program Renewal activities could have ultimately been sourced from groundwater. However, given the limited scale of the activities and need for water, the effects would be less than significant and would not substantially decrease groundwater supplies. Moreover, none of the maintenance activities would involve substantial creation of new impervious surface area (apart from minor amounts potentially associated with "hard" bank stabilization treatments) over the long-term, and thus would not substantially interfere with recharge processes. Establishment/use of staging areas for certain maintenance activities could potentially lead to soil compaction at specific sites (e.g., due to vegetation clearing and operation of heavy equipment), which could limit groundwater recharge; however, the scale and severity of these effects would not be substantial.

The majority of the creek channels maintained by Valley Water are earthen, as opposed to having concrete-lined beds and banks. These creek channels provide passive avenues for groundwater recharge under existing conditions, as water is allowed to percolate through the streambed to shallow and deeper groundwater aquifers below. The current sediment

transport conditions in the Program Renewal Area generally encourage accumulation of fine materials in stream channels, particularly where vegetation is overgrown and where the longitudinal slope of the channel is low. Groundwater recharge capacity is reduced in these locations as fine sediments clog pores and interstices between bed sediments. Over time, this reduces the rate at which surface water in the channels percolates to groundwater.

In this regard, sediment removal activities under the Program Renewal (which typically would remove accumulated fine sediment) would improve groundwater recharge conditions relative to baseline. Similarly, bank stabilization activities would assist in reducing fine sediment inputs to the channels, which would minimize adverse effects to groundwater recharge rates. Implementation of BMPs (see Chapter 2, *Project Description*, and the summary descriptions below) would ensure that bank stabilization design provides protection to prevent potential downstream erosion and associated transport/deposition of fine sediment and would help to minimize erosion and sedimentation caused by implementation of the Program Renewal activities (e.g., via ground disturbance within and adjacent to stream channels).

Over the longer term (following maintenance activities), implementation of BMPs would ensure that channels are left in a condition such that substantial erosion and sedimentation would not occur – thereby minimizing any impacts to groundwater recharge rates due to fine sediment deposition. Additionally, any new impervious surface associated with certain "hard" bank stabilization treatments (see **Table 2-4** in Chapter 2, *Project Description*) would be minor in the context of the larger stream channel/bank and would not substantially affect groundwater recharge.

In some respects, vegetation management activities could increase stream flow velocities and thereby possibly reduce groundwater recharge rates. As water passes over the streambed more freely (with reduced channel roughness), it would have less time to percolate through to groundwater aquifers below. However, the vegetation management activities (e.g., invasive plant management) also would support the growth of healthy riparian vegetation along channel banks, which could assist in the reduction of fine sediment inputs to the channels, thus resulting in beneficial impacts to groundwater recharge. Likely, these factors would balance out and the overall effect of vegetation management on groundwater recharge/supplies would be neutral or positive. Other maintenance activities (e.g., downed tree management, management of animal conflicts, and various minor maintenance activities) would likely have a minimal effect on groundwater supplies and recharge.

As discussed further in Impact HYD/GM-3, the Program Renewal Area is underlain by the Santa Clara Subbasin and Llagas Subbasin, both of which are designated high priority by DWR (2024). Valley Water is responsible for managing these subbasins and implements its GWMP pursuant to SGMA. The discussion in Impact HYD/GM-3 further discusses how the Program Renewal would not substantially affect groundwater supplies or recharge and would not impede Valley Water's ability to sustainably manage the subbasins.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal activities to help minimize impacts to groundwater supply and recharge. A full description of each BMP is provided in Chapter 2, *Project Description,* **Table 2-10**.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 unless an extension is granted, based upon identified criteria, and would minimize potential for erosion and sedimentation associated with ground-disturbing activities.
- **BMP GEN-21: In-Channel Minor Activities** would require that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel; this would minimize potential for disturbance of the streambed and banks during the maintenance activities.
- **BMP GEN-25: Erosion and Sediment Control Measures** would require that erosion and sediment control measures (e.g., silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization, wood chips, and straw mulch) be implemented during Program Renewal activities. BMP GEN-25 would also require visual inspections and corrective actions to ensure BMPs are functioning correctly and would help to limit potential adverse hydrology and geomorphology impacts from Program Renewal activities, particularly those involving ground disturbance.
- **BMP GEN-26: Staging and Stockpiling of Materials** would impose requirements on staging and stockpiling of materials to minimize potential impacts to hydrology/water quality, such as requiring that staging areas be located on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. BMP GEN-26 would also require that stockpiled soils or other materials not remain exposed during the wet season, unless adequately stabilized/contained, which would further minimize potential for sediments to be discharged to stream systems.
- **BMP GEN-27: Sediment Transport** would require that truck beds used to transport spoils to disposal locations be lined with an impervious material or that the tailgate be blocked, so as to prevent sediment-laden water from being released back into waterways.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing Program Renewal work areas. When temporary access points are necessary, disturbed areas must be revegetated or otherwise stabilized, and disturbance of the stream bottom will generally be avoided. This will further limit potential erosion and sedimentation associated with Program Renewal activities.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** would require that channels be graded to ensure a smooth transition zone following sediment removal activities to prevent potential erosion following restoration of flows. This would help to minimize undesired effects on channel characteristics resulting from Program Renewal activities.
- **BMP SED-3: Restore Channel Features** would require that low-flow channels within non-tidal streams be contoured to facilitate fish passage and emulate the pre-construction conditions as closely as possible within the finished channel topography.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** would require that the toe of the bank be protected by leaving vegetation to the maximum extent possible, such as to minimize the potential effect of localized erosion.

This would reduce potential for erosion of streambanks, and associated downstream sedimentation, associated with the Program Renewal activities over the long term.

- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low–ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** would require that the site design for bank stabilization activities provide proactive protection of vulnerable areas within the reach of the worksite (e.g., appropriately keyed-in coir logs, riparian planting, strategic placement of rock, and flow deflectors) to prevent potential downstream erosion impacts. Bank stabilization shall also include appropriate transition designs to prevent potential erosion impacts.
- **BMP REVEG-1: Seeding** would require that sites where maintenance activities result in exposed soil be stabilized to prevent erosion; specifically, through seeding with native seed after maintenance activities are complete.

Conclusion

Given the Program Renewal's minimal effects on groundwater, and with implementation of the BMPs, Program Renewal activities would not substantially decrease groundwater supplies or substantially interfere with groundwater recharge, and there would be no impedance of sustainable management of the groundwater basin. The impact would be **less than significant.** No mitigation would be required.

Impact HYD/GM-2: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including Through the Alteration of the Course of a Stream or River or Through the Addition of Impervious Surfaces, in a Manner Which Would:

i. Result in substantial erosion or siltation on- or off-site (Less than Significant)

The Program Renewal would alter the existing drainage pattern of the site or area in the sense that sediment removal, vegetation management, bank stabilization, and related activities would change the physical characteristics of stream channels (e.g., capacity, channel roughness, cross-sectional area). This, in turn, would change the flow patterns and rates within the channels, although largely this would be to return or restore the channels to historical norms or design. The Program Renewal would not add substantial new impervious surfaces; however, certain activities could potentially increase surface runoff rates from specific areas (e.g., staging areas), as discussed further below. Generally, the potential erosion/siltation effects of the Program Renewal can be separated into shorter term, construction-related effects and longer term, operational effects – these two categories are discussed separately below.

Construction/Short-Term Effects

As described in Section 3.14, "Water Quality" (Impact WQ-1), various Program Renewal activities, including bank stabilization and sediment removal, would disturb soil on the bed and banks of streams. To a lesser extent, vegetation management, management of animal conflicts, and minor maintenance activities (e.g., limited grading) may involve ground disturbance near or within stream banks. Such ground disturbance could loosen soils and potentially lead to subsequent erosion and sedimentation/siltation. In addition to impacts to

the stream channel, establishment and use of staging areas and temporary access roads or ramps for Program Renewal activities could result in erosion and siltation, particularly if protective measures are not implemented. Additionally, stockpiled soils (if not properly stabilized) could erode and allow for discharge of fine sediment to nearby surface waterbodies.

Moreover, removal of vegetation (e.g., cattails, instream woody vegetation, etc.) can increase erosion potential in the short-term where bare ground is left exposed. Sediment that erodes from these areas during subsequent flow events could travel downstream and aggrade in a downstream location. Additionally, apart from the active ground disturbance from construction equipment/activity during bank stabilization activities, erosion could occur during the period when banks are left exposed (e.g., before new plantings have become established) following stabilization treatments.

As discussed above, under existing conditions, the geomorphology of many streams within the Program Renewal Area has been affected by hydromodification, including hardscape development, constraining of the natural floodplain, and operation of dams/reservoirs. While erosion and sedimentation/siltation are natural processes, and many streams are more depositional in their lower reaches, the dynamics are changed in Program Renewal Area systems due to the anthropogenic factors listed above. In this respect, prior adverse effects are incorporated into baseline and the Program Renewal is serving to counteract the excessive accumulation of sediment (and vegetation growth) that is contrary to flood protection objectives. Nevertheless, if Program Renewal activities were to cause substantial erosion and siltation over the short-term due to ground-disturbing activities, this would be a significant effect under CEQA. The longer-term effects of sediment removal and other Program Renewal activities on stream systems/geomorphology are discussed further under "Operation/Long-Term Effects" below.

Valley Water would implement BMPs during Program Renewal activities (see the summary descriptions below), which would ensure that erosion and siltation over the short-term due to ground-disturbing activities would not be substantial.

Operation/Long-Term Effects

Many of the Program Renewal activities, such as vegetation management and bank stabilization activities, would have long-term beneficial effects with respect to potential erosion and sedimentation. While vegetation often serves to stabilize soils and prevent erosion, excessive vegetation can clog or concentrate flows to portions of the channel, where increased scour and/or erosion can occur. Pruning and selective removal of trees on streambanks that have the potential to capture debris or redirect erosive flows toward the banks would tend to reduce erosion/sedimentation processes along streambanks. Similarly, the stabilization and treatment of streambanks that are actively eroding or slumping would reduce the long-term erosion and sedimentation of an actively destabilized streambank. Certain minor maintenance activities (e.g., removal of downed trees, minor erosion repairs above the ordinary high-water mark) also could reduce long-term erosion and sedimentation effects in creek channels. Additionally, Valley Water would implement BMPs (see the summary descriptions below) to ensure that any long-term erosion associated with vegetation management, bank stabilization, and certain minor maintenance activities (sediment removal is discussed separately below) is minimized.

With respect to sediment removal, stream dynamics and potential long-term impacts are more complex. As noted above, sediment removal activities would not cause substantial short-term adverse impacts through excessive erosion/sedimentation; however, long-term effects are possible, and the baseline must be considered. As described in Section 3.9.3, "Environmental Setting," (see "Stream Dynamics and Sediment Balance"), for the majority of stream reaches within which Program Renewal activities would occur, the baseline condition is net depositional, whereby sediment loading far outpaces the ability for channels to transport their material downstream. The sediment removed from the Program Renewal Area's channels typically would not outpace the sediment transport capacity of downstream reaches. In other words, because the flood protection channels in the Program Renewal Area in general receive an abundant sediment supply, removing a portion of this sediment through maintenance activities would not create "starved" channels downstream. Thus, maintenance activities would not create additional erosion effects over the long term.

Moreover, Valley Water would implement BMPs (see the summary descriptions below) that would help to further minimize any erosion caused by sediment removal activities over the long term.

Other Program Renewal activities (e.g., management of animal conflicts) would not substantially affect erosion rates or processes over the long term.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal activities to help minimize impacts to reduce erosion and siltation. A full description of each BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would establish in-channel work windows (June 15 to October 15) for ground-disturbing maintenance activities, which would minimize potential for erosion and sedimentation.
- **BMP GEN-21: In-Channel Minor Activities** would require that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel, which would minimize the potential for sedimentation.
- **BMP GEN-25: Erosion and Sediment Control Measures** would require implementation of erosion and sediment control measures (e.g., silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization, wood chips, and straw mulch).
- **BMP GEN-26: Staging and Stockpiling of Materials** would require that stockpiled soils not remain exposed during the wet season unless adequately stabilized.
- **BMP GEN-27: Sediment Transport** would require that truck beds used to transport spoils to disposal locations are fitted such as to prevent sediment-laden water from being released to waterways.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing work areas.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** would require that the toe of the stream bank be protected by leaving vegetation to the maximum extent possible and would require that sites where maintenance activities

result in exposed soil be stabilized (through seeding with native seed) to prevent erosion after maintenance activities are complete.

- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** would require that bank stabilization designs include proactive protection of vulnerable areas within the reach of the worksite (e.g., appropriately keyed-in coir logs, riparian planting, strategic placement of rock, and flow deflectors) to prevent potential downstream erosion impacts.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** would require that channels be graded to ensure a smooth transition zone following sediment removal activities to prevent potential erosion following restoration of flows.
- **BMP SED-3: Restore Channel Features** would require that low-flow channels within non-tidal streams be contoured to emulate the pre-construction conditions as closely as possible within the finished channel topography – further minimizing potential adverse effects associated with changing the channel characteristics and flow patterns.

Conclusion

Overall, given implementation of applicable BMPs, Program Renewal maintenance activities' modifications of drainage systems would not result in substantial erosion or siltation on- or off-site in the short term or over the long term. Therefore, impacts would be **less than significant**. No mitigation would be required.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite (Less than Significant)

As noted above, the Program Renewal would not result in the creation of substantial new impervious surface; while bank stabilization design could include "hard" treatment techniques, such as concrete crib walls and sacked concrete, any additional impervious surface associated with these treatments would be negligible in the context of the larger stream channel. Thus, the Program Renewal generally would not result in a substantial increase in the rate or amount of surface runoff.

Program Renewal activities would require the use of staging areas and access roads – to the extent these areas are developed on previously-undisturbed ground, this could increase the surface runoff from these areas. Vegetation clearing and grading of staging areas and access roads would cause water to flow more quickly off these sites (vegetation generally slows surface flows and allows for greater soil infiltration). Additionally, operation of heavy equipment on staging areas and access roads would compact soils, further limiting their capacity for infiltration and increasing runoff. However, generally, these effects would be minor and localized at specific locations – and in many cases, Valley Water would be able to utilize previously-disturbed areas and access points.

Over the long term, the Program Renewal would seek to restore flow conveyance conditions to reduce the potential for flooding. The maintenance activities would largely occur within the designated 100-year flood zone of channels in the Program Renewal Area (also see

discussion in Section 3.14, "Water Quality," Impact WQ-3). Generally, sediment removal and vegetation management activities, as well as other minor maintenance activities that would remove sediment and obstructions (e.g., debris, trash), would restore the flow conveyance capacity of Program Renewal Area channels to their design levels. Therefore, these maintenance activities would reduce the potential for flooding relative to baseline conditions. While these activities would not change surface runoff generation, they would restore the drainage/flow of runoff to downstream areas. Implementation of the BMPs summarized below would further minimize potential for substantial flooding to occur due to increased runoff from Program Renewal construction-related activities.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal activities to help reduce the potential for substantial flooding. A full description of each BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 (unless an extension is granted), which would limit the potential for substantial rainstorms occurring while staging areas and access roads are being utilized for Program Renewal activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** would require that Valley Water locate staging areas on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing Program Renewal work areas. When temporary access roads are necessary, disturbed areas would be revegetated or otherwise stabilized.

Conclusion

The Program Renewal would not modify drainage patterns such as to result in a substantial increase in the amount of surface runoff that would increase flooding on- or offsite, and maintenance activities would reduce the potential for flooding by improving the drainage and flow of runoff to downstream areas. Implementation of the BMPs summarized above would further minimize any flooding impacts from surface runoff. As a result, impacts would be **less than significant**. No mitigation would be required.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems (Less than Significant)

As described under Impact HYD/GM-2(ii) above, the Program Renewal would not substantially increase surface runoff water generation, as it would not involve creation of substantial new impervious surface area. Bank stabilization activities could create small areas of impervious surface (depending on treatment technique), but this would not substantially increase runoff. Additionally, given implementation of applicable Valley BMPs (summarized below), Program Renewal activities would not substantially increase surface runoff rates from staging areas and access roads that may be denuded/compacted due to operation of heavy equipment. As a result, the Program Renewal would not create or contribute substantial additional quantities of runoff water.

Valley Water is responsible for managing streams/flood protection facilities in the Program Renewal Area. Many of these facilities also serve to convey stormwater runoff from urban areas in the watershed and thus constitute integral elements of the region's stormwater conveyance infrastructure. As such, the only stormwater drainage system that could be affected by the Program Renewal would be Valley Water's own infrastructure. Over the long term, implementation of Program Renewal activities (e.g., vegetation management, sediment removal) would restore the design capacities of streams, which have been diminished through excessive accumulation of vegetation and sediment. Consistent with the overall goals of the Program Renewal, maintenance activities would "maintain the flow conveyance capacity of Valley Water flood protection facilities to reduce flood risks and ensure public safety."

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal activities to help reduce stormwater runoff. A full description of each BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 (unless an extension is granted), which would limit the potential for substantial rainstorms occurring during Program Renewal activities and therefore reduce the potential for runoff water.
- **BMP GEN-26: Staging and Stockpiling of Materials** would require that Valley Water locate staging areas on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation; therefore, operation of equipment in these already disturbed locations would not substantially increase surface runoff rates.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing Program Renewal work areas. Using existing facilities that have already been in use would not substantially increase runoff water.

Conclusion

The Program Renewal would maintain the capacity of the area's stormwater drainage system due to maintenance activities, restoring flood conveyance. Additionally, implementation of BMPs would further reduce stormwater runoff. Therefore, the Program Renewal would not modify drainage patterns of the site or area such as to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and the impact would be **less than significant**. No mitigation would be required.

iv. Impede or redirect flood flows (Less than Significant)

As discussed above, Valley Water manages stormwater and provides flood protection to the Program Renewal Area through its flood protection facilities (many of which take the form of streams). One of the primary goals of the Program Renewal is to maintain the flow conveyance capacity of these facilities to ensure adequate flood protection. In this respect, the primary effect of the Program Renewal over the long term would be to provide flood protection and minimize flood risk in the Program Renewal Area.

Nevertheless, Program Renewal maintenance activities would take place within and adjacent to streams, which would be within the 100-year flood hazard zone, as mapped by FEMA. To the extent large pieces of equipment and materials could be within the flood zone when a large storm and subsequent flooding occurs, this could impede or redirect the flood flows. Additionally, maintenance activities (e.g., sediment removal) may involve localized diversion of streamflow and/or dewatering of work areas, which could be considered a redirection of flood flows – particularly if high stream flows were to occur while diversion systems are being utilized. Valley Water would implement the BMPs summarized below when performing ground-disturbing maintenance activities, which would substantially reduce the potential for equipment and materials to be present in or adjacent to channels when flood flows occur, or for diversion systems to be utilized during high flow periods, since large storms nearly always occur in the November to April period in the Program Renewal Area.

Over the longer term, the Program Renewal would not place additional material or equipment within stream channels that could potentially impede or redirect flood flows. The sediment removal and vegetation management activities would largely return channel morphology to historical norms and/or design conditions (by removing excessive accumulated material). Changes to flow patterns within individual stream reaches because of bank stabilization treatments would be modest and would not substantially impede or redirect flood flows.

Applicable Best Management Practices

The BMP summarized below would be implemented as part of the Program Renewal to help reduce the potential for impediment to or redirection of flood flows. A full description of each BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 (unless an extension is granted), which would reduce the potential for equipment and materials to be in, or adjacent to, channels when flood flows would occur.

Conclusion

As described in BMP GEN-1, ground disturbing activities would generally only occur within the dry season, which would reduce the potential for equipment and materials to be present in, or near, the channels when flood flows would occur. Additionally, Program Renewal maintenance activities would be implemented to restore flood conveyance by removing accumulated materials. Therefore, the Program Renewal would not modify drainage patterns of the site or area such as to impede or redirect flood flows. The impact would be **less than significant**. No mitigation would be required.

Impact HYD/GM-3: Conflict with or Obstruct Implementation of a Sustainable Groundwater Management Plan (Less than Significant)

As mentioned in Impact HYD/GM-1, the Program Renewal Area is underlain by two groundwater subbasins: Santa Clara Subbasin (2-009.02) and Llagas Subbasin (3-003.01). These groundwater basins are both designated high priority by DWR (2024) and are managed by Valley Water through its GWMP (Valley Water 2021). As described above, the GWMP describes Valley Water's comprehensive groundwater management framework,

including existing and potential actions to achieve basin sustainability goals and ensure continued sustainable groundwater management (Valley Water 2021). To meet the sustainability goals and objectives, the GWMP includes sustainability indicators and outcome measures (Table 3.9-1). In particular, with respect to groundwater storage, the outcome measure is as follows: "Projected end of year groundwater storage is greater than 278,000 AF in the Santa Clara Plain, 5,000 AF in the Coyote Valley, and 17,000 AF in the Llagas Subbasin" (Valley Water 2021). In short, if these year-end targets are not met, Valley Water will not be achieving the sustainability goals and objectives for the subbasins.

Groundwater storage levels (i.e., supplies) can be affected by various factors, including hydrologic conditions in any given year or series of years, groundwater pumping rates and demands, availability of surface supplies for artificial recharge programs, etc. Many of these are outside the direct control of Valley Water, but strategies and methods (both short- and long-term) can be employed in the event sustainability outcome measures are not being met (pursuant to the GWMP and/or Valley Water's Water Shortage Contingency Plan) to minimize the strain on groundwater supplies. Valley Water employs an extensive network of groundwater monitoring wells that provide information regarding groundwater levels and trends, and which can inform management decisions (Valley Water 2021).

As described in Impact HYD/GM-1, the Program Renewal would not substantially affect groundwater supplies or recharge. The Program Renewal would only use minor amounts of groundwater (e.g., for dust control, equipment cleaning, concrete mixing, etc.), which would not meaningfully affect storage in the Santa Clara Subbasin or Llagas Subbasin. Additionally, the Program Renewal would not add substantial amounts of new impervious surface area – any impervious surface associated with hard bank stabilization treatments would be relatively minor in scale and would not substantially affect groundwater recharge rates. On balance, the effects of sediment removal and vegetation management activities on groundwater recharge would likely be neutral or positive. Over the long-term, sediment removal would remove accumulated fine sediment which fills spaces between coarser bed sediments; thus, improving recharge rates. Vegetation management could similarly serve to reduce fine sediment inputs and accumulation (by supporting growth of healthy riparian vegetation). Conversely, implementation of Valley Water BMPs (summarized below) would minimize potential erosion/sedimentation caused by the ground-disturbing and long-term Program Renewal activities, as well as any effects related to denuded and compacted staging areas and access roads.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to help to minimize the potential for erosion/sedimentation. A full description of each BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 (unless an extension is granted), which would minimize potential for erosion and sedimentation associated with ground-disturbing activities.
- **BMP GEN-21: In-Channel Minor Activities** would require that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel, which would minimize the potential for sedimentation.

- **BMP GEN-25: Erosion and Sediment Control Measures** would require implementation of erosion and sediment control measures (e.g., silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization, wood chips, and straw mulch).
- **BMP GEN-26: Staging and Stockpiling of Materials** would require that stockpiled soils not remain exposed during the wet season unless adequately stabilized.
- **BMP GEN-27: Sediment Transport** would require that truck beds used to transport spoils to disposal locations are fitted such as to prevent sediment-laden water from being released to waterways.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing work areas.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** would require that channels be graded to ensure a smooth transition zone following sediment removal activities to prevent potential erosion following restoration of flows.
- **BMP SED-3: Restore Channel Features** would require that low-flow channels within non-tidal streams be contoured to emulate the pre-construction conditions as closely as possible within the finished channel topography – further minimizing potential adverse effects associated with changing the channel characteristics and flow patterns.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** would require that the toe of the stream bank be protected by leaving vegetation to the maximum extent possible and would require that sites where maintenance activities result in exposed soil be stabilized (through seeding with native seed) to prevent erosion after maintenance activities are complete.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation.
- **BMP REVEG-1: Seeding** would require that sites where maintenance activities result in exposed soil be stabilized to prevent erosion; specifically, through seeding with native seed after maintenance activities are complete.

Conclusion

The Program Renewal would not substantially contribute to the Santa Clara Subbasin or Llagas Subbasin not meeting outcome measures and sustainability indicators in the GWMP. As discussed in Section 3.14, "Water Quality," implementation of the Program Renewal would not substantially affect groundwater quality (given implementation of applicable Valley Water BMPs) – therefore, it also would not affect achievement of outcome measures related to groundwater quality. No other elements of the Program Renewal would conflict with or obstruct implementation of the GWMP. Therefore, the impact would be **less than significant**. No mitigation would be required.

3.10 Noise

3.10.1 Introduction

This section describes the regulatory setting, environmental setting, and potential impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) related to noise. Maintenance activities under the current Stream Maintenance Program (SMP-2) are very similar to maintenance activities proposed for the Program Renewal and have a similar potential for noise generation; therefore, the noise-related impacts of the Program Renewal are treated similar to those of SMP-2 for the purposes of this noise analysis.

Overview of Noise Concepts and Terminology

Noise can be defined as unwanted sound, which is mechanical energy transmitted by pressure waves in a compressible medium such as air. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because the difference in sound pressure between sounds at the lower and upper range of human hearing is so large, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called "A-weighting," written "dBA."

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terms used in this section:

- Sound is a vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism, such as the human ear or a microphone.
- Noise is sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- Decibel (dB) is a unit of measure of sound. It works on a logarithmic scale, which is calculated as the square of the ratio of the pressure amplitude of a sound to a reference sound pressure amplitude (20 micro-pascals).
- A-weighted decibel (dBA) is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- Maximum sound level (Lmax) is the maximum sound level measured during the measurement period.
- Minimum sound level (Lmin) is the minimum sound level measured during the measurement period.

- Equivalent sound level (Leq) is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy as a time-varying sound level during that same period of time.

- Percentile-exceeded sound level (Lxx) is the sound level exceeded a specific percentage of time during a specific time period. As an example, L10 is the sound level exceeded 10 percent of the time.

- Day-night level (Ldn) emphasizes the undesirability of noise occurring during the night. This is accomplished by adding 10 dB to the A-weighted sound levels during the period from 10:00 p.m. to 7:00 a.m.

- Community noise equivalent level (CNEL) is another way of emphasizing the undesirability of noise during the night, which adds 5 dB to the A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

Ldn and CNEL values rarely differ by more than 1 dB. As a matter of practice, Ldn and CNEL values are considered to be equivalent and are treated as such in this analysis. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling (for an increase) or halving (for a decrease) the sound level. **Table 3.10-1** presents example noise levels for common noise sources; the levels are measured adjacent to the source.

Table 3.10-1. Examples of Common Noise Levels

Common Outdoor Activities	Noise Level (dBA)
Jet flyover at 1,000 feet	110
Gas lawnmower at 3 feet	100
Diesel truck at 50 feet traveling 50 miles per hour	90
Noisy urban area, daytime	80
Gas lawnmower at 100 feet, commercial area	70
Heavy traffic at 300 feet	60
Quiet urban area, daytime	50
Quiet urban area, nighttime	40
Quiet suburban area, nighttime	30
Quiet rural area, nighttime	20

Source: California Department of Transportation (Caltrans) 2020

Sensitivity

Sensitive receptors include residents, recreational users, children, recovering sick patients, and anyone else who would be disrupted by unwanted noise. Areas where stream maintenance activities take place may contain potential sensitive receptors to noise generation.

An individual's reaction to noise is determined by the nature and volume of the noise itself as well as by the environment in which the noise occurs, and the individual's tolerance for noise. For example, individuals accustomed to noisy environments or use of loud equipment such as chainsaws are less likely to consider this noise to be intrusive than those who are not. Conversely, the use of chainsaws in areas with low ambient noise levels is more likely to be considered disruptive than usage in areas where noise levels are normally high.

Vibration Fundamentals

Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Similar to noise, most environmental vibrations consist of a composite, or "spectrum," of many frequencies. The normal frequency range of most ground-borne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Velocity or acceleration are usually used to describe the response of humans, buildings, and equipment to vibration (Federal Transit Administration [FTA] 2018). Vibration information in this document has been described in terms of the peak particle velocity (PPV), which is defined as the maximum instantaneous peak of the vibration signal (FTA 2018). Although PPV is appropriate for evaluating the potential of building damage, it is not suitable for evaluating human response and vibration velocity in decibels (VdB) is used instead.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do those characterized by low frequencies, so that in an area distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps.

3.10.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to noise for the Program Renewal. Applicable regional and local plans, policies, regulations, and ordinances related to noise are presented in **Appendix C**, *General Plan Policies and Ordinances* and are also summarized below in **Table 3.10-2**, since they are directly related to the impact analysis.

Table 3.10-2. State Land Use Compatibility Standards for Community Noise Environment

Land Use Category	Community Noise Exposure – Ldn or CNEL (dB)						
	50	55	60	65	70	75	80
Residential – Low Density Single Family, Duplex, Mobile Homes							
Residential - Multi-Family							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable: New construction or development generally should not be undertaken.

Source: California Governor's Office of Planning and Research 2017

Federal Plans, Policies, Regulations, and Laws

No federal laws, regulations, or policies for construction-related noise and vibration apply to the Program Renewal; however, federal FTA guidelines are described below.

Federal Transit Administration Noise and Vibration Assessment

The FTA Division of Environmental Analysis developed the Transit Noise and Vibration Impact Assessment (FTA 2018), which provides guidance for assessing noise and vibration from construction, operation, and maintenance projects. FTA established construction noise criteria based on the land use type (i.e., residential or nonresidential) affected by noise and depending on whether construction noise would occur during the daytime or nighttime. FTA guidelines state that for evaluating daytime construction noise impacts in outdoor areas, a noise threshold of 90 dBA Leq and 100 dBA Leq should be used for residential and commercial/industrial areas, respectively (FTA 2018).

Vibration can impact both humans and buildings; therefore, thresholds have been established for both of these types of receptors. For construction vibration impacts, the FTA guidelines use an annoyance threshold of 80 VdB for infrequent events (fewer than 30 vibration events per day) for residences and a damage threshold of 0.12 inch per second (in/sec) PPV for buildings susceptible to vibration damage (FTA 2018).

State Plans, Policies, Regulations, and Laws

State Land Use Compatibility Standards for Community Noise

The California Government Code requires cities and counties to include a noise element as part of their general plans. The purpose of the noise element is to provide a guide for establishing a pattern of land uses that minimizes the exposure of community residents to excessive noise. The Governor's Office of Planning and Research published general plan guidelines (California Governor's Office of Planning and Research 2017) that include guidelines for the compatible noise levels for various land uses, presented in Table 3.10-2.

Regional and Local Plans, Policies, Regulations, and Ordinances

Santa Clara County and each of the cities within the county have established policies and guidelines that aim to minimize the effects of noise on people through prescriptive construction standards, zoning restrictions, hours of operation, and suppression techniques. Noise level goals are defined that are assumed to be compatible with various land use types within each jurisdiction. However, all jurisdictions recognize that higher than standard noise levels will be generated from time to time by heavy equipment engaged in construction or

maintenance activities. Because heavy-equipment noise is an unavoidable necessity particularly for public works projects, jurisdictions typically include wording in noise ordinances and elements exempting these short-term, temporary, higher noise levels from compliance with the overall standards for land uses. Noise standards and policies established by Santa Clara County and incorporated cities within the Project Renewal Area are summarized in Table 3.10-3 and further detailed in Appendix C.

Table 3.10-3. General Plan and Noise Ordinance Standards

Jurisdiction	Specific Noise Criteria
Santa Clara County	Operation of tools or construction equipment on weekdays and Saturdays not allowed between the hours of 7 p.m. and 7a.m. No operation allowed on Sundays or holidays except for emergency work. Mobile equipment must not result in a noise level in excess of 75 dBA for single/two-family residential (SFR), 80 dBA for multi-family residential (MFR), or 85 dBA for commercial areas.
City of Campbell	Powered equipment is limited to the hours of 8 a.m. and 7 p.m. Monday through Friday and between the hours of 9 a.m. and 6 p.m. Saturday, Sunday, and on national holidays. However, noise from public works and maintenance construction projects may be exempted by the city manager. Vibrations from temporary construction and demolition are exempt from vibration perception standards. **From 2040 General Plan (City of Campbell 2023):** The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists. At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences. Unnecessary idling of internal combustion engines shall be prohibited. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible. The required construction-related noise mitigation plan shall also specify that haul truck deliveries are to occur within the same range of hours specified for construction equipment. The construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.
City of Cupertino	Construction activities are limited to daytime hours (7 a.m. to 8 p.m. Monday through Friday, and 9 a.m. and 6 p.m. Saturdays and Sundays). High-quality noise muffler and abatement devices must be installed and in

Jurisdiction	Specific Noise Criteria
	good condition on all construction equipment, and no single device may produce a noise in excess of 87 dBA at a distance of 25 feet OR noise levels at nearby properties must not exceed 80 dBA. However, special exemptions may be granted by the noise control officer, which would include notification to nearby properties. Leaf blowers must be certified to be 65 dBA or less and operated during the limited daytime hours specified above.
City of Gilroy	Construction equipment may only be operated between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and 9:00 a.m. and 7:00 p.m. on Saturday. No construction work is permitted on Sunday or city holidays. Exceptions may be granted by the chief building official. Loud noises during curfew from 10:00 p.m. and 7:00 a.m. are prohibited. This includes noise from animals. **From 2040 General Plan (City of Gilroy 2020):** Require a vibration impact assessment for proposed development projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures or sensitive receptors would occur.
City of Los Altos	Construction activities limited to the hours between 7:00 a.m. and 5:30 p.m. Monday through Friday and between 9:00 a.m. and 3:00 p.m. on Saturday in residential areas. In non-residential areas, construction can occur between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturday. No construction work is permitted on Sunday or city holidays. Equipment may not be operated on holidays. Maximum permissible noise levels during daytime operation are 75 dBA for R1 zones, 80 dBA for PCF and R3 zones, and 85 dBA for OA and C zones. Gasoline-powered blowers prohibited. Use or operation of portable gasoline-powered leaf blowers within the city for any purpose except testing noise levels. Vibration. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty (150) feet (forty-six (46) meters) from the source if on a public space or public right-of-way. Owning, possessing, or harboring any animal or bird which howls, barks, meows, squawks, or makes other noises continuously and/or incessantly for a period of ten (10) minutes or intermittently for one-half hour or more which creates a noise disturbance across a residential or commercial real property line or within a noise sensitive zone is prohibited.
Town of Los Altos Hills	Construction near residential areas is limited to the hours of 8:00 a.m. to 5:30 p.m. Monday through Friday. Construction is not permitted on Saturdays without a permit, and no construction is permitted on Sundays or public holidays.

Jurisdiction	Specific Noise Criteria
Town of Los Gatos	Construction activities are limited to 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 4 p.m. on Saturday. Construction is not allowed on Sunday and holidays. No single device may produce a noise in excess of 85 dBA at a distance of 25 feet and the noise levels at nearby properties must not exceed 85 dBA. Use of powered equipment is not time-limited in commercial, industrial, or public spaces. Gasoline leaf blowers shall be prohibited from use in all residential, commercial, and industrial zones or public space. Electric leaf blowers in excess of sixty-five (65) decibels shall be prohibited from use in all residential, commercial, and industrial zones or public space, measured fifty (50) feet from the source. Owning, possessing, or harboring any animal or bird which howls, barks, meows, squawks, or makes other noises continuously and/or incessantly for a period of ten (10) minutes or intermittently for one-half hour or more which creates a noise disturbance across a residential or commercial real property line or within a noise sensitive zone is prohibited.
City of Milpitas	Noise associated with SMP exempted from noise ordinance as maintenance of utility facilities. **From Milpitas General Plan (City of Milpitas 2021):** Noise-generating construction activities, including truck traffic coming to and from the construction site for any purpose, shall be limited to between the hours of 7:00 am and 7:00 pm. No construction shall occur on National holidays. All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment. The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists. At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences. Unnecessary idling of internal combustion engines shall be prohibited for a duration of longer than five minutes. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible. Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing. The construction contractor shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the

Jurisdiction	Specific Noise Criteria
	disturbance coordinator shall be conspicuously posted at the construction site.
City of Monte Sereno	Construction activities are generally limited to 8 a.m. to 8 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays. Construction is not permitted on Sundays/public holidays. However, work not requiring a permit from the city is exempted from the time restrictions. The use of mechanical blowers is limited to 8:00 am to 5:00 pm Monday through Friday, 9:00 a.m. to 5:00 pm Saturday. The maximum volume for mechanical blowers is 65 decibels as measured 50 feet from the blower for backpack-mounted blowers, and 70 decibels as measured 50 feet from the blower for handheld blowers.
City of Morgan Hill	Construction activities are generally limited to 7 a.m. to 8 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or public holidays. However, public work activities are exempted from the time restrictions. The operation of any noise-creating blower, power fan or internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, unless the noise from such blower or fan is muffled and such engine is equipped with a muffler device to deaden such noise is prohibited. The keeping of any animal or bird which, by causing frequent or long-continued noise, disturbs the comfort or repose of any person in the vicinity is prohibited.
City of Mountain View	Construction activities are limited to 7 a.m. to 6 p.m. on weekdays. No work is permitted on weekends or holidays without prior approval.
City of Palo Alto	Construction activities on non-residential areas are limited to the hours of 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or public holidays. No single piece of equipment may produce a noise level in excess of 110 dBA at 25 feet, nor may noise level at any point outside of the property plane exceed 110 dBA. A sign must be posted at the entrance of the construction site indicating construction hours and violation penalties. No person shall operate any leaf blower which does not bear an affixed manufacturer's label indicating the model number of the leaf blower and designating a noise level not in excess of sixty-five dBA when measured from a distance of fifty feet utilizing American National Standard Institute methodology. Any leaf blower which bears such a manufacturer's label shall be presumed to comply with any noise level limit of this chapter provided that it is operated with all mufflers and full extension tubes supplied by the manufacturer for that leaf blower. No person shall operate any leaf blower without attachment of all mufflers and full extension tubes supplied by the manufacturer for that leaf blower. No person shall operate any leaf blower within any non-residential zone except during the following hours: eight a.m. and six p.m. Monday through Friday, and ten a.m. to four p.m. Saturday. No person shall operate any leaf blowers on Sundays and holidays. No person shall operate any leaf blower powered by an internal combustion engine within any residential

Jurisdiction	Specific Noise Criteria
	zone after July 1, 2005. Commercial operators of leaf blowers are prohibited from operating any leaf blower within the city if they do not prominently display a certificate approved by the Chief of Police verifying that the operator has been trained to operate leaf blowers according to standards adopted by the Chief of Police.
City of San Jose	Construction occurring within 500 feet of a residential unit is limited to the hours of 7 a.m. to 7 p.m. on weekdays. However, these time restrictions are limited only to construction activities requiring a permit from the city. **From Envision San José 2040 General Plan (City of San José 2011):** Require new development to minimize continuous vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, including ruins and ancient monuments or building that are documented to be structurally weakened, a continuous vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to a building. A continuous vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction. Equipment or activities typical of generating continuous vibration include but are not limited to: excavation equipment; static compaction equipment; vibratory pile drivers; pile-extraction equipment; and vibratory compaction equipment. Avoid use of impact pile drivers within 125 feet of any buildings, and within 300 feet of historical buildings, or buildings in poor condition. On a project-specific basis, this distance of 300 feet may be reduced where warranted by a technical study by a qualified professional that verifies that there will be virtually no risk of cosmetic damage to sensitive buildings from the new development during demolition and construction.
City of Saratoga	Construction activities permitted only between the hours of 7:30 a.m. and 6:00 p.m. on weekdays and between 9 a.m. to 5 p.m. on Saturdays in residential areas. No construction is permitted on holidays and on weekends in commercial areas. No individual piece of equipment may exceed a noise level of 83 dBA at a distance of 25 feet. The use of any leaf blower other than a certified leaf blower, as defined by this article, is prohibited. Certified leaf blower means a leaf blower with a noise level measured at sixty-five dBA or less at a distance of fifty feet. Certified leaf blowers may be used or operated Monday through Friday between 8:00 A.M. and 5:00 P.M., on Saturdays between 10:00 A.M. and 5:00 P.M., and may not be used on Sundays. Powered garden tools shall not exceed seventy-eight dBA at any point twenty-five feet or more from the source of noise. Such tools may be utilized during the following days and times: (1) Gasoline powered chainsaws may be utilized between 8:00 A.M. and 5:00 P.M. Monday through Friday and between 10:00 A.M. and 5:00 P.M. on Saturdays and Sundays. (2) Except as specified above, other powered garden tools may be utilized between the hours of 8:00 A.M. and 9:00 P.M. any day of the week. Wood chippers shall not exceed one hundred dBA at any point twenty-five feet or more from the source of noise. Wood chippers may be utilized between 8:00 A.M. and 5:00 P.M. Monday through Friday and Saturdays

Jurisdiction	Specific Noise Criteria
	between 10:00 A.M. and 5:00 P.M. Use of wood chippers shall not be allowed on Sundays. It shall be unlawful for any person to harbor, keep or maintain any animal, including birds, in the City which howls, barks, meows, squawks, or makes other noises which creates a noise disturbance across a property boundary during the following times: (1) Between the hours of 10:00 P.M. and 7:00 A.M. (2) Between the hours of 7:00 A.M. and 10:00 P.M. where the noise disturbance occurs continuously for a period of five minutes or intermittently for at least thirty minutes.
City of Santa Clara	Construction occurring within 300 feet of a residential area is generally limited to the hours of 7 a.m. to 6 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or holidays.
City of Sunnyvale	Construction activities permitted only between the hours of 7 a.m. and 6 p.m. on weekdays and between 8 a.m. to 5 p.m. on Saturdays. Construction is not permitted on Sundays or on national holidays. No loud environmentally disruptive noises, such as air compressors without mufflers, continuously running motors or generators, loud playing musical instruments, radios, etc., will be allowed where such noises may be a nuisance to adjacent residential neighborhoods. **From General Plan (City of Sunnyvale 2011):** Require a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used within 600 feet of an existing structure. If applicable, the City shall require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures would occur.

Source: Appendix C

3.10.3 Environmental Setting

Within the Program Renewal Area, background noise levels vary greatly from very low noise levels in the semi-rural western and eastern foothills to high noise levels in the urbanized Santa Clara Valley floor. Channels within the Program Renewal Area flow through both urban (residential, commercial, and industrial) areas and parkland or agricultural (open space) areas. Open space, agricultural, and recreational areas are anticipated to have fewer noise conflicts with proposed maintenance activities because relatively fewer sensitive receptors would exist. A majority of the channels in the Pajaro River Basin are adjacent to natural open space and agricultural lands, compared to channels within the Santa Clara Basin.

The highest noise levels in the Program Renewal Area are in the vicinity of the Mineta San Jose International Airport. The noise environments of the north and central portions of the Santa Clara Valley are heavily influenced by airplane takeoffs and landings. Noise monitoring conducted around the airport indicates that noise levels from aircraft alone exceed 65 dBA CNEL (Santa Clara County Airport Land Use Commission 2024). Other airports in Santa Clara County include Reid-Hillview County Airport, San Martin Airport, Moffett Federal Airfield, and the Palo Alto Airport.

Noise-Sensitive Land Uses

Many of the channels maintained under the Program Renewal would be located in the vicinity of noise-sensitive land uses. Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purposes. Given the extent of the Program Renewal Area, it is not reasonable to identify the specific characteristics of every location that may be affected by the Program Renewal; however, a brief synopsis of noise sensitive areas is provided below.

Recreational Areas

Some public parks and trails are located adjacent to areas where the Program Renewal activities could occur. Some key recreation areas along Coyote Creek include Hellyer Park, Kelley Park, Los Lagos Golf Course, Coyote Creek Golf Club, Santa Clara County Model Aircraft Skypark, Anderson Lake County Park, and the Coyote Creek Trail. The Guadalupe River Trail, Alviso Marina County Park, Baylands Park and Twin Creeks Sports Complex, and Guadalupe River Park are recreation areas located along the Guadalupe River, and Byxbee Park is located adjacent to the Palo Alto Flood Basin tide gate. Some portions of recreational streamside trails are not as populated as other areas and are located on the outskirts of urban areas. In less frequented trail reaches, it is possible for one person to travel for long periods of time without seeing other people. Ambient noise levels in this situation are predominantly characterized by the sounds of the natural environment. Conversely, many public parks and trails within the Program Renewal Area are located in urban and residential areas. During the summertime and particularly on weekends, congested conditions along streamside trails and parks are commonplace. In these areas, ambient noise reflects these human activities and may fluctuate seasonally.

Residential Areas

The Program Renewal activities may take place adjacent to residential neighborhoods and homes. Residents in less-developed areas are potentially the most sensitive noise receptors within urban areas, as noise from adjacent waterway activities may be the only significant noise sources generated by human activity that affect these properties. Unlike recreational land uses, which are made up of transient user groups, residences are permanent dwellings. Thus, residents would be unable to avoid noise from adjacent land uses and would be exposed to them for longer periods of time.

The degree to which sound reaches residents from adjacent areas would depend on the type of activity being conducted, the distance from the noise source to the residence, and the materials from which the home was constructed. Though the County and some cities impose a minimum building setback from waterways to protect life and property, residences may still be subject to loud or continuous noise from users of these waterways. In the Program Renewal Area, channels with a large extent (more than 3 miles) of adjacent residential land use are found in Adobe, Canoas, Los Gatos, Lower Silver, Matadero, Permanente, Ross, San Francisquito, San Tomas Aquino, Saratoga, Stevens, and Wildcat creeks, Sunnyvale East Channel, and the Guadalupe River.

Other Areas

Noise sensitive land uses identified in the California Government Code include residences, recreation areas, schools, hospitals, nursing homes, churches, libraries, and long-term medical or mental care facilities. In addition to recreational and residential areas, the Program Renewal activities may occur near any of these other sensitive land uses. As described above, the degree to which sound would reach these sensitive users would be dependent on a variety of factors. Seniors and others residing at hospitals, nursing homes, or long-term medical or mental care facilities would be anticipated to have longer noise exposure periods (similar to those in residential areas) because they would generally be unable to avoid noises from adjacent land uses. Schools, churches, or libraries would be used for shorter periods of time and may have noise exposure periods of shorter duration.

Overview of Noise Exposure and Reduction

Land uses sensitive to noise generation are primarily those with an outdoor use component that includes an expectation of increased noise levels. Examples of sensitive land uses include backyards and gardens in residential areas, parks and open space reserves, outdoor shopping areas, schoolyards, and cemeteries. In these areas, excessive noise levels are a nuisance to people using outdoor facilities. Noise levels can normally be reduced for interior spaces using modern construction techniques. Interior noise levels inside residences adjacent to creeks are typically less than 45 dBA CNEL with the windows closed because of the noise attenuation provided by walls and windows. However, outdoor areas cannot be easily shielded from high noise levels without the construction of noise barriers.

3.10.4 Impact Analysis

Methodology

The baseline for the noise analysis is the existing noise levels generated by the current SMP-2 activities. To the extent that new areas have been added for this Program Renewal, as well as the addition of new types of treatments requiring new pieces of equipment, an incremental increase in noise would result to potentially new and existing sensitive receptors compared to the existing baseline conditions.

Impacts related to noise from the Program Renewal were analyzed quantitatively, using noise levels measured for Valley Water's 2002 SMP environmental impact report (EIR), for the various construction equipment and vehicles associated with proposed maintenance activities.

Data collected for the 2002 SMP EIR (Valley Water 2002) were used to estimate noise exposure levels to sensitive receptors at a distance of 100 feet from the construction site. This data was used because noise generated by maintenance equipment is not believed to have changed substantially in the last 20 years. On the contrary, equipment may now be quieter and, as such, using the 2002 data provides a conservative analysis. These values are similar to values contained in FTA's guidance for construction noise (FTA 2018), which confirms the assertion that noise levels have not substantially changed or that more accurate data is not available than the values observed in 2002. The FTA guidance was used to estimate noise levels for equipment not included in the 2002 study as well as for installation of piles and sheet piles (FTA 2018).

Valley Water may use three different techniques for bank stabilization involving the use of piles depending on the specific conditions at a location. The different techniques that Valley Water may use include impact pile driving, vibratory pile driving, and hydraulic pile press-in of sheet piles.

To predict the noise levels at different distances, the methodology used in the 2002 SMP EIR treated the Program equipment as a point or stationary noise source and calculated noise levels based on the assumption that noise spreads out uniformly in waves from a source and attenuates (decrease in force and magnitude as it spreads) at a given rate per distance doubled. Noise attenuation from a point source was estimated based on the presence of "soft" non-reflective ground and intervening vegetation between the noise source and the receptor. Thus, the attenuation rate was estimated at 9 dB for each doubling of distance, with further increases in attenuation because of air absorption over distances greater than 1,000 feet. **Table 3.10-4** illustrates the noise level estimates from typical maintenance activity equipment:

Table 3.10-4. Typical Noise Associated with SMP Activities

Noise Source	dBA at 100 feet	dBA at 50 feet
Excavator working from top of bank	67	76
Chainsaw	75	84
Mowers/ spray trucks/ weedeaters	65-70	74-79
Excavator and truck working concurrently (bank stabilization-type projects)	68-73	74-79
Bulldozer	79	85
Trucks	78	84
Backhoe	74	80
Compactor	76	82
Crane	77-82	83-88
Generators	76	82
Pumps	71	77
Impact Pile Driver	95	101
Vibratory Pile Driver	89	95
Hydraulic Pile Press -in	60	66

Source: Valley Water 2002, FTA 2018

Any noise generated by proposed maintenance activities would be temporary. Typical maintenance activities would be short term, expected to last up to 10 days for sediment removal and 8 days for bank stabilization, although in some cases either of these activities could last for several weeks or longer. Vegetation management activities would be conducted on an ongoing basis but would typically not occur in any given location for longer than a few days, although in some cases could last for several weeks or longer.

Construction activity associated with the operation of heavy equipment and vibratory pile driving may generate localized ground-borne vibration and noise. Vibration from ground-

disturbing construction activity is typically below the threshold of perception when the activity is more than 50 feet from the receiver. Based on methods described by FTA (2018), the vibration levels at specific distances can be calculated using the following equation:

$$L_{eq}(equip)\_ = L_{50ft} - 20LOG_{10}(D/50)$$

Where: $L_{eq\ (Equip)}$ = The rms velocity level adjusted for distance, in VdB
L_{50ft} = the source reference vibration level at 50 feet
Log_{10} = the logarithm with base 10 of the argument
D = distance from the equipment to the receiver, in feet

Using the most sensitive building types and land use categories, the PPV would need to exceed 0.12 in/sec and the L_{eq} would need to exceed 65 VdB to result in any building damage or vibrational disturbances. For industrial buildings, the PPV would need to exceed 0.5 in/sec to result in any building damage or vibrational disturbances (FTA 2018). The typical annoyance level for single-family residences is 80 VdB.

Potential vibration from the Program Renewal was evaluated using the following assumptions:

- Using typical equipment noise emission levels from Table 12-2 of FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2018), the pieces of equipment that would produce the greatest vibration would be a drill and a bulldozer. For construction activities that do not include either of these equipment items, loaded trucks would be another possible source of vibration.
- Using the equations described above, the estimated distance between the maintenance activity area and the nearest sensitive receptors would need to be at least 42.8 feet to meet the annoyance level threshold of 80 dBA.

Criteria for Determining Significance

For the purposes of this analysis and pursuant to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Program Renewal would result in a significant impact on noise if it would lead to:

A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, or generate a substantial incremental increase in noise levels;

B. Generation of excessive ground-borne vibration or ground-borne noise levels; or

C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

Noise levels associated with the Program Renewal were compared against regional and local noise ordinance standards presented in Appendix C and summarized above in Table 3.10-2. These local standards represent noise levels acceptable to the local community, consistent with CEQA Guidelines Appendix G (Question XIII([a]). All Program-related noise would be temporary in nature; therefore, permanent noise impacts are not discussed further.

Environmental Impacts

Impact NZ-1: Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of the Proposed Maintenance Areas in Excess of City or County Standards or Generate a Substantial Incremental Increase in Noise Levels (Significant and Unavoidable)

The Program Renewal activities would involve the use of heavy machinery and equipment, such as bulldozers, excavators, dump trucks, gradalls (hydraulic, wheel-mounted backhoes often used with wide buckets for dressing earth slopes), skid steer loaders, soil compactors, cranes, forklifts, tractor mowers, weedeaters, and hand-held devices (e.g., chainsaws, hand sprayers) that may expose sensitive receptors in the vicinity of the proposed maintenance areas to increased noise levels.

Program Renewal maintenance activities would also occur on weekdays consistent with the County's noise ordinance and applicable local noise standards of local cities. Maintenance activities would generally be conducted during daytime hours, between 7:00 a.m. and 7:00 p.m. In some instances, work may be conducted on weekends. The types and relative distances of sensitive receptors to Valley Water streams and facilities would not differ substantially throughout the Program Renewal Area, and estimated noise levels associated with activities would be substantially similar for all locations. In areas where there are other sensitive receptors, such as near commercial buildings and recreation areas where large numbers of people congregate or stay in one location for an extended period such as picnic shelters and playgrounds, Valley Water would shroud noisy pieces of equipment or use noise barriers to lower the noise levels.

A more detailed description of the potential noise effects from the various Program Renewal activities is provided below.

Sediment Removal

Heavy equipment would be operated from either the top of a bank, if accessible, or within a channel during sediment removal activities. When working within a channel, the slopes generally would serve as a noise barrier for sensitive receptors. Adjacent receptors would be somewhat less shielded from heavy equipment when operations occurred on the top of a bank; thus, the noise associated with work at this upper location would represent a more conservative estimation of effects.

As described in the 2002 SMP EIR, monitoring of a Valley Water excavator sited on the top of the bank and removing sediment from Lower Penitencia Creek channel recorded an Leq of approximately 67 dBA at 100 feet. Based on standard attenuation estimates, an excavator working 50 feet from a residential backyard with soft ground and intervening vegetation would generate 76 dBA. Valley Water estimates that on average, sediment removal projects progress at a rate of 200-400 feet of creek channel per day. Therefore, a typical subdivision lot (60 feet wide) located 50 feet from the operating equipment would be subject to 73 dBA for 1 to 2 hours during sediment removal operations. As the equipment moves further along the channel, noise levels would attenuate until equivalent to the background noise levels and would no longer be perceptible (Valley Water 2002).

Vegetation Management and Downed Tree Management

Vegetation management activities include hand tools (e.g., the use of chain saws, weed eaters) and mechanical equipment (e.g., mowers, excavators), which would have the potential to result in elevated noise levels. Although chain saws produce noise levels of approximately 75 dBA at 100 feet (Valley Water 2002), this type of equipment would be used infrequently and only for short periods of time. Noise levels associated with equipment used in more moderate durations (such as weedeaters, mowers, and herbicide spray trucks) are commonly in the range of 65-70 dBA at 100 feet (Valley Water 2002). The use of animals for grazing would only be conducted where permitted by local ordinances and policies, including noise ordinances. Several cities and towns have animal noise ordinances which prohibit animals from making incessant noise for thirty minutes or more in a 24-hour period or intermittent noise for sixty minutes or more in a 24-hour period. Animals used for herbivory treatment may make noises that could violate these ordinances. In general, vegetation management activities would be conducted on an ongoing basis but would typically not occur in any given location for longer than a few days, although in some cases could occur for several weeks or longer.

Bank Stabilization

Noise levels associated with typical bank stabilization activities were analyzed in the 2002 SMP EIR and estimated to produce noise levels of 68-73 dBA at 100 feet with both a truck and excavator working concurrently. Based on standard attenuation, noise levels within 50 feet of working equipment would be approximately 74-79 dBA. Depending on site-specific conditions of the Program activity, Valley Water estimates that the range of progression for bank protection work typically would be 20-40 feet per day. Therefore, the standard residential lot (60 feet wide) located within 50 feet of bank protection activities could experience noise levels up to 79 dBA over 3-10 hours (depending on the difficulty of the activity).

For the Program Renewal, Valley Water is adding the option to add piles or sheet piles for bank stabilization. Noise levels during pile driving would include the use of a crane to move piles as well as the equipment used for pile driving (impact hammer, vibratory pile driver or hydraulic press). With the use of a crane and pile driving equipment at a distance of 50 feet, noise levels would vary between 88 and 101 dBA. Pile driving activity would typically take two days but may take longer in some instances. Sensitive receptors near pile driving activities would experience substantial noise levels, with impact pile driving being the most severe at 101 dBA.

Management of Animal Conflicts and Minor Maintenance

As described in Chapter 2, *Project Description*, management of animal conflicts and minor maintenance activities would occur as needed. Management of animal conflicts would involve trapping to remove unwanted species (e.g., ground squirrels), or other means of control to discourage unwanted behavior. Such methods would not be a significant source of noise to adjacent receptors. Similarly, most minor maintenance activities would not require the use of equipment that would result in significant sources of noise (i.e., trash and debris removal, fence repair, tide gate maintenance). On occasion, machinery may be required to remove in-channel sediment or debris, or grade maintenance roads; however, such activities would be relatively small in scale and shorter in duration than identified for the activities above. As such, noise emissions from heavy equipment associated with minor maintenance would be

similar to those described for sediment removal activities; however, the overall duration and extent of use would be substantially less.

Summary

In general, bank stabilization work would result in the greatest noise generation, though this type of work usually would occur in varied locations over the period of the Program Renewal. This includes pile driving noise levels that could be up to 101 dba. Other work activities (sediment removal and vegetation removal) may repeat two or three times in the same location over the 10-year Program Renewal timeframe. Based on the noise estimations and the close proximity of adjacent property boundaries (some of which properties are sensitive receptors) to Valley Water streams and facilities (some less than 50 feet), Program Renewal maintenance activities could increase ambient noise levels by 3 dB or more (a noticeable increase), and/or result in exterior noise levels in excess of 75 dBA which is the lowest threshold established in noise ordinances for construction equipment. Valley Water would implement best management practices (BMPs) GEN-43 and GEN-45 to ensure that the public is notified of all upcoming maintenance work, that work is limited to normal daytime hours near residential uses, and that maintenance equipment is equipped with adequate noise attenuation devices. Nonetheless, since the maintenance activity locations, timeframes, and schedules for each individual maintenance activity have not yet been determined, proposed maintenance activities have the potential to expose the public (particularly residential receptors) to temporary increases in noise levels exceeding the standards in the local general plans and noise ordinances or cause a substantial incremental increase in noise levels. This impact would be significant.

Implementation of **Mitigation Measure NZ-1 (Noise and Vibration Mitigation Reduction Measures to Align with Local Noise Standards)** would require the implementation of several measures to reduce temporary noise increases to further align with adopted noise ordinances in the Program Renewal Area, including setting limits on the noise levels of some specific equipment pieces such as leaf blowers, grinders, and woodchippers. In addition, signs displayed near grazing animals would provide contact information to receive noise complaints to evaluate future use of grazing in specific work areas. Valley Water would take into consideration future use of herbivory treatments in areas that receive noise complaints. Additional mitigation, such as use of hay bales as temporary sound barriers, would not be feasible, as they would block access along many of the access roads and impede movement of maintenance equipment. No feasible mitigation besides that specified in Mitigation Measure NZ-1 is available to further reduce significant impacts associated with temporary noise from the Program Renewal. Implementation of the below-listed BMPs and Mitigation Measure NZ-1 may not reduce temporary noise impacts below the required levels in all cases. Therefore, even with the implementation of Mitigation Measure NZ-1, Program Renewal activities would result in a **significant and unavoidable** impact associated with temporary increases in noise.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce noise impacts during Program Renewal activities. Full descriptions of each BMP are provided in **Table 2-10** in Chapter 2, *Project Description*.

- **BMP GEN-43: Public Outreach** would inform the public of upcoming maintenance work through local neighborhood notices, signage, and on Valley Water's website to reduce potential disturbances to the public associated with noise.
- **BMP GEN-45: Minimize Noise Disturbances to Residential Areas** would reduce noise by ensuring equipment has appropriate mufflers installed, idling is minimized, and work times are consistent with noise ordinances.

Conclusion

Maintenance work under the Program Renewal would be temporary; permanent changes in the existing noise environment would not occur. Instead, effects would be analogous to construction-type noise, the significance of which would be determined by applicable construction-noise related policies and the potential to disturb adjacent receptors. Program Renewal activities would represent a continuation of activities undertaken by Valley Water since implementation of SMP-2 with some new stream miles and locations being added where maintenance activities may occur. Additionally, the types and relative distances of sensitive receptors to Valley Water streams and facilities would not differ substantially throughout the Program Renewal Area, and estimated noise levels associated with activities would be substantially similar for all locations. However, the Program Renewal Area covers multiple jurisdictions with varying standards, and implementation of Mitigation Measure NZ-1 may not reduce temporary noise impacts below the local standards in all cases. In addition, substantial temporary incremental increases in noise levels could occur in some cases. Therefore, this analysis conservatively concludes that, even with Mitigation Measure NZ-1, significant temporary noise impacts could result; the impact would be **significant and unavoidable**.

Mitigation Measure NZ-1: Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards

Valley Water or its contractors shall implement the following noise reduction measures:

1. All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.

2. The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.

3. Leaf blowers must be certified to be 65 dBA or less measured at 50 feet from the source of the noise.

4. Powered garden tools must not exceed 75 dBA at 25 feet from the source of the noise.

5. Woodchippers must not exceed 100 dBA at any point 25 feet from the source of the noise.

6. At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.

7. Unnecessary idling of internal combustion engines shall be prohibited for a duration of longer than five minutes.

8. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.

9. The required construction-related noise mitigation plan shall also specify that haul truck deliveries are to occur within the same range of hours specified for construction equipment.

10. Neighbors located adjacent to the construction site shall be notified in writing of the construction schedule.

11. Use of temporary sound barriers shall be implemented in areas located near sensitive receptors to reduce noise levels to the extent feasible. Temporary noise barriers shall be rated to reduce noise at least 5 dBA.

12. Pile driving activities will use the least noisy method that would generate the least amount of vibration possible at a location, with hydraulic press being the preferred method, followed by the vibratory method. If no other method is feasible for the location, impact pile driving shall be used.

13. Avoid conflicts with local noise ordinances during prescribed herbivory. Prior to commencing prescribed herbivory treatments, Valley Water will post signs including contact information, including a daytime telephone number, of the project representative, who may be contacted regarding noise complaints. Valley Water will take into consideration future use of herbivory treatments in areas that receive noise complaints and may adjust the limits of treatment areas to be further from sensitive receptors.

14. Valley Water or the construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

Impact NZ-2: Generate Excessive Ground Vibration or Ground-borne Noise Levels (Significant and Unavoidable)

The Program Renewal activities would utilize some heavy equipment that could generate excessive ground-borne vibration and affect local residents or buildings. Program Renewal activities such as bank stabilization and sediment removal activities typically would involve the use of heavy machinery and equipment, such as bulldozers, excavators, dump trucks, gradalls, and tractor mowers. These types of equipment generate ground-borne vibrations. The highest ground-borne vibrations will occur during pile driving activities.

The vibration threshold for buildings occurs at a PPV of 0.12 in/sec for buildings extremely susceptible to vibration damage. As described in the methods of analysis above, the pile driving equipment would produce the largest amount of vibration. The building damage threshold for a PPV of 0.12 in/sec would occur for any building within 135.7 feet of a maintenance activity site that involves pile driving and the use of an impact pile driver. The human annoyance threshold of 80 dVB would occur at 291.5 feet. Vibratory pile driving building damage for a PPV of 0.12 in/sec would occur at 83.6 feet, and the human annoyance threshold would occur at 170.3 feet. Vibration would not occur at these levels for hydraulic press-in of piles. For other general heavy construction equipment such as a bulldozer, the building damage threshold for a PPV of 0.12 in/sec would occur at 20.5 feet, and a human annoyance threshold of 80 dVB would occur at 42.8 feet. There may be buildings and sensitive receptors that are within this distance for some locations covered in the Program Renewal. Therefore, the impact from ground-borne vibration levels would be excessive, and this would be a significant impact.

Applicable Best Management Practices

None of the BMPs described in Chapter 2, *Project Description*, would address ground-borne vibration or ground-borne noise levels generated by the Program Renewal.

Conclusion

Program Renewal activities would involve pile driving and other activities that would produce substantial ground-borne vibrations. Thus, a significant impact would occur. Mitigation Measure NZ-1 includes a measure requiring that the least vibration generating method of pile driving be used to the extent feasible at a given location. Even with mitigation, some pile driving activities may still be required that exceed vibration thresholds, and result in a **significant and unavoidable impact**.

> **Mitigation Measures:** See Mitigation Measure **NZ-1** (**Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards)** above.

Impact NZ-3: Be Located within the Vicinity of a Private Airstrip or an Airport Land Use Plan or within Two Miles of a Public Airport, and Expose People Residing or Working in the Project Area to Excessive Noise Levels (No Impact)

While Program Renewal maintenance activities may occur in channels within the vicinity of an airport land use plan or within 2 miles of an airport, implementation of maintenance activities under the Program Renewal would not result in the siting of noise-sensitive land uses or receptors in the vicinity of a private airstrip, airport land use plan, or within two miles of a public airport. Although workers would be in work areas temporarily, they would not have long-term exposure to noise from the airport and workers are protected from excessive noise exposure under federal Occupational Safety and Health Administration (OSHA) and the California Division of Occupational Safety and Health (Cal/OSHA) regulations. Therefore, implementation of maintenance activities under the Program Renewal would not result in the siting of noise-sensitive land uses or receptors in the vicinity of a private airstrip, airport land use plan, or within two miles of a public airport that could be exposed to excessive noise levels.

Applicable Best Management Practices

None of the BMPs described in Chapter 2, *Project Description*, would address exposure to airport noise related to the Program Renewal activities.

Conclusion

Because all maintenance activities would be temporary and infrequent, maintenance workers would not be exposed to excessive noise levels from an airport. Additionally, the Program Renewal does not involve the permanent placement of sensitive noise receptors in the vicinity of an airport or airport land use plan. Thus, **no impact** would occur, and no mitigation is required.

Mitigation Measures: No mitigation is required.

3.11 Public Services and Utilities

3.11.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts that could result from the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) related to public services and utilities. Public services and utilities considered include police and fire services, schools, parks. solid waste, water supply, wastewater, stormwater drainage, and underground and overhead utilities.

3.11.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to public services and utilities for the Program Renewal. Applicable regional and local plans, policies, regulations, and ordinances related to public services and utilities are presented in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C details various plans throughout the County and local jurisdictions that encompass programs, strategies, policies, and goals for effectively managing public services and utilities. These policies aim to ensure the dependable delivery and upkeep of public services and facilities, promote equitable access to essential services, maintain infrastructure for present and future needs, and improve overall emergency preparedness.

Federal Plans, Policies, Regulations, and Laws

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (amended 1986) is a federal act regulating the potential health and environmental problems associated with solid waste hazards and non-hazardous wastes. Specific regulations addressing solid waste issues are contained in Title 40 of the Code of Federal Regulations.

State Plans, Policies, Regulations, and Laws

California Integrated Waste Management Act

To conserve water, energy, and other natural resources, and to protect the environment by reducing the incineration or landfill disposal of waste, the California Integrated Waste Management Act (CIWA) of 1989 (Public Resources Code [Pub. Res. Code] Division 30) enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, reuse, recycle and compost at least 50% of wastes by 2000 (Pub. Res. Code Section 41780). A jurisdiction's diversion rate is the percentage of its total waste that a jurisdiction diverts from disposal through reduction, reuse, and recycling programs. Per capita disposal rates are used to determine if a jurisdiction's efforts are meeting the intent of the act.

The CIWA is overseen by the California Department of Resources Recycling and Recovery (CalRecycle). CalRecycle oversees partnerships with local governments, industries, and the public to reduce waste, decrease greenhouse gas emissions, promote the highest and best use

of materials, and regulate the handling, processing, and disposal of solid waste (CalRecycle 2024).

In 2011, the Legislature implemented a new approach to the management of solid waste. California's Commercial Recycling Bill (AB 341) went into effect on July 1, 2012, and set a recycling goal of 75 percent diversion by 2020, and annually thereafter. The bill is intended to: (1) reduce greenhouse gas (GHG) emissions by diverting recyclable materials, and (2) expand the opportunity for increased economic activity and green industry job creation. AB 341 is a statewide policy goal rather than a city or county jurisdictional mandate.

Nonhazardous Solid Waste Disposal Standards

Title 14, Chapter 3, of the California Code of Regulations provides minimum standards for solid waste handling and disposal in California pertaining to nonhazardous solid waste management. CalRecycle administers programs including the regulation of nonhazardous solid waste facilities in the state. These standards may apply to activities related to Program Renewal construction.

California Utility Notification Requirements

Title 8 California Code of Regulations (Cal. Code of Regs.) Section 1541 requires excavators to determine the approximate locations of subsurface installations such as sewer, telephone, fuel, electricity, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) before initiating excavation activities.

3.11.3 Environmental Setting

Police Services

Law enforcement and public safety services in the Program Renewal Area are provided by a combination of County and City departments. The Santa Clara County Sheriff's Department employs over 2,025 staff members, 1,453 of which are law enforcement officers. The Santa Clara County Sheriff's Department is also the primary law enforcement agency in unincorporated areas of the County and the communities of Cupertino, Los Altos Hills, and Saratoga (Santa Clara County 2024a). In addition, the Sheriff Transit Patrol Division of the County Sheriff's Department provides law enforcement services for the Valley Transportation Authority, and the Headquarters Patrol Division provides patrol services for the Santa Clara County Parks Department (Santa Clara County 2024b). In 2023, the Santa Clara County Sheriff's Department had an average incident response time of 9 minutes and 47 seconds (Santa Clara County 2024b). Cities like San Jose, Sunnyvale, Santa Clara, Gilroy, and Mountain View each have their own police departments which operate independently. These departments are responsible for enforcing laws at the local, state, and federal levels within their respective city boundaries. Furthermore, the California Highway Patrol provides law enforcement and emergency aid within the Program Renewal Area.

Fire Services

As stated in Section 3.15, "Wildfire," regions of the Program Renewal Area are located within both the State Responsibility Area (SRA) and Local Responsibility Area (LRA) (Santa Clara County Fire Safe Council [SCCFSC] 2024) (refer to **Figures 3.15-1** and **3.15-2** in Section 3.15, "Wildfire"). In California, the state handles preventing and controlling wildfires in SRAs,

whereas in LRAs, the financial responsibility falls to local jurisdictions. LRAs in the Program Renewal Area include those under the jurisdiction of the City of San José, City of Santa Clara, Campbell, Sunnyvale, Mountain View, Cupertino, Los Altos, Saratoga, Gilroy, and the City of Morgan Hill (California Department of Forestry and Fire Protection [CAL FIRE] 2024). The Santa Clara County Fire Department (SCCFD) provides fire, safety, and hazardous materials services for over 225,000 residents within unincorporated parts of LRAs of the County including the communities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno, Redwood Estates, Saratoga, and nearby areas. The SCCFD employs more than 300 personnel, including 66 firefighters and officers which are stationed across 16 fire stations equipped with 31 primary fire vehicles and 3 command vehicles. In 2023, the SCCFD had an average response time of 1 minute and 36 seconds for an urgent fire incident, and 4 minutes and 41 seconds for a moderate risk fire incident within an urban area (SCCFD 2024a, 2024b).

The Program Renewal Area is also within the boundaries of the South Santa Clara Fire Protection District (SSCFPD) (SSCFPD 2021). Both the City of Morgan Hill, and the SSCFPD, have an agreement with CAL FIRE to deliver emergency medical services, fire prevention, and fire suppression. These services are provided from two fire stations owned by the city and one CAL FIRE station located at the southern end of town (SCCFD 2017). The CAL FIRE Santa Clara Unit also serves the SRA portion of the Proposed Program Renewal Area. CAL FIRE is California's fire department and resource management agency with nearly 8,000 permanent and seasonal employees.

Schools

In Santa Clara County, 34 school districts and 405 schools provide educational services to over 246,450 students (ED Data 2024). These schools are either in session during a traditional school calendar, starting in August and ending in May or June, or open year-round. Therefore, children may be present during Program activities that are implemented near schools.

Solid Waste

There are five permitted and active Class III landfills[1] in Santa Clara County. **Table 3.11-1** displays the current status of each facility designated to receive waste materials. As stated in Section 3.8, "Hazards and Hazardous Materials," the Kettleman Hills hazardous waste landfill, a Class I facility[2], has a capacity of approximately 10.7 million cubic yards but is only able to accept very small quantities of hazardous waste because it has nearly reached capacity (Waste Management n.d.). Another Class I facility, the Buttonwillow Landfill situated west of Bakersfield, accepts hazardous waste from both Northern and Southern California and has a permitted capacity of 13,250,000 cubic yards. The Buttonwillow Landfill is projected to reach full capacity by 2040 and would be able to accommodate hazardous waste from the Program Renewal (CalRecycle n.d.).

[1] A Class III landfill is designed for non-hazardous waste, including yard trash, construction debris, municipal solid waste, waste tires, and properly managed asbestos (CalRecycle 2024).
[2] A Class I landfill is designed to handle hazardous waste, non-hazardous industrial waste, municipal wastewater, and radioactive waste, while being strictly regulated to prevent contamination of drinking water resources. These landfills are typically situated thousands of feet below the lowest underground drinking water sources (USEPA 2024).

Table 3.11-1. Status of Class III Landfills in Santa Clara County

Landfill	Maximum Permitted Throughput (tons per day)	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Estimated Closure Date (when maximum capacity may be reached)
Newby Island Sanitary Landfill (43-AN-0003-01)	4,000	57,500,000	16,400,000	January 2041
Kirby Canyon Recycling and Disposal Facility (43-AN-0008-01)	2,600	36,400,000	16,191,600	December 2059
Guadalupe Sanitary Landfill (43-AN-0015-01)	1,300	28,600,000	11,055,000	January 2048
Zanker Road Class III Landfill (43-AN-0007-01)	1,300	1,300,000	360,000	August 2015
Zanker Material Processing Facility (43-AN-0001-01)	350	640,000	640,000	November 2025

Source: CalRecycle 2019

Valley Water Sediment, Trash, and Vegetation Removal[3]

For the Program Renewal, it is estimated that Valley Water would remove between 4,090 cubic yards and 83,792 cubic yards of sediment (approximately 6,135 to 125, 688 tons) per year, which is commensurate with the average annual amount of 40,281 cubic yards that was removed between 2014 and 2022 according to Valley Water's Annual Summary Report (Valley Water 2023). Between 2019[4] and 2024, Valley Water removed approximately 13,433 cubic yards of trash during Stream Maintenance Program (SMP) activities (Lewis, pers. comm., 2024). Between 2014-2022, Valley Water removed approximately 3,360[5] cubic yards of vegetation. Valley Water does not have projections for the volume of trash and vegetation that will be removed for the Program Renewal; however, the projection numbers will likely be similar to what was removed during SMP-2.

[3] Valley Water also disposes small amounts of hardscape structures, such as various forms of concrete either as part of a concrete removal mitigation project, an in-kind repair project where Valley Water needs to remove some materials, or a bank repair that would be using a different method than what had been there. These other materials are relatively small amounts compared to sediment, trash and vegetation removals and would not have a major effect on total volumes and are therefore not discussed in this section (Lewis, pers. comm., 2024).

[4] This information is only available from 2019 because prior to this, the amount of vegetation removed was tracked using dump fees rather than tons.

[5] This number was converted from tons per year using an average of 0.3 ton per cubic yard for vegetative material.

Water and Wastewater

Water and groundwater in Santa Clara County are managed by Valley Water and then provided to different retail municipal and private water companies that distribute it to consumers, such as San Jose Water Company, California Water Service Company, and Purissima Hills Water District. Every city in the county, including unincorporated areas, has its own water supplier (Valley Water 2024).

City-operated utilities, like the City of Palo Alto Utilities (CPAU) and Santa Clara Water and Sewer Utilities, handle sewage collection. The San Jose–Santa Clara Regional Wastewater Facility is the primary treatment center for wastewater in Santa Clara County, serving 1.4 million people across eight cities: San Jose, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Monte Sereno, and Saratoga. The Regional Water Quality Control Plant, managed by the City of Palo Alto, provides services to Los Altos, Los Altos Hills, Mountain View, Palo Alto, Stanford University, and the East Palo Alto Sanitary District. The South County Regional Wastewater Authority (SCRWA) oversees wastewater treatment for Gilroy and Morgan Hill, while the Donald M. Somers Water Pollution Control Plant serves the city of Sunnyvale (Santa Clara County 2015).

Stormwater Drainage

Several types of stormwater management infrastructure are utilized within Santa Clara County including above-ground facilities such as retention and detention basins, culverts, channels, and outfall structures. Some key locations for storm infrastructure in the County include the cities of San Jose, Cupertino, Palo Alto, Mountain View, Santa Clara, and Sunnyvale. Each of these cities include several stormwater detention basins intended to temporarily store stormwater to manage peak flows and improve groundwater recharge (Santa Clara Valley Urban Runoff Pollution Prevention Program 2025). Additionally, green infrastructure practices such as bioswales, rain gardens, and permeable pavements are increasingly utilized to filter pollutants and reduce runoff volumes, contributing to efficient runoff management and flood prevention in urban areas (City of San Jose 2023; California State Water Resources Control Board 2023).

Underground and Overhead Utilities

Underground and overhead utilities in the Program Renewal Area include natural gas, and water, (including raw water and treated water pipelines owned by Valley Water) pipelines, sewer and storm drains, and communication lines (i.e., telephone, cable, power, and Internet services). If not visibly apparent, the location of these lines within work sites can be obtained through coordination within Valley Water, with County and municipal utility departments, and with the managing utility company.

Parks

Santa Clara County's park system includes regional parks, county parks, and local community parks. The Santa Clara County Parks and Recreation Department manages 28 regional parks that encompass thousands of acres and provide amenities for several recreational activities such as hiking, biking, horseback riding, and picnicking (Santa Clara County Parks 2025). Additionally, each city within Santa Clara County contain parks that cater to community needs. For example, in San Jose, parks like Kelley Park and Almaden Lake Park provide recreational facilities, playgrounds, and picnic areas. In Los Gatos, parks such as Oak Meadow,

features a historic carousel and access to the Los Gatos Creek Trail (City of San Jose 2023; Town of Los Gatos 2022).

3.11.4 Impact Analysis

Methodology

Impacts of the Program were evaluated qualitatively, based on the potential for the proposed maintenance activities to require new or expanded facilities, public services and utilities systems, or disrupt existing public utilities and service systems. The impact analysis is based on the existing conditions at the time of the May 2022 Notice of Preparation and evaluates impacts from the maintenance activities implemented for the existing Program (SMP-2) and the new activities proposed for the Program Renewal. Impacts evaluated were temporary, short-term impacts; no long-term impacts of the Program Renewal on public services and utilities were identified. The assessment and significant determinations were guided by the significance criteria provided in the California Environmental Quality Act (CEQA) Guidelines, which are provided below. The analysis considered the implementation of applicable best management practices (BMPs) and adherence to existing laws and regulations.

For purposes of the analysis below, Appendix G CEQA significance criteria (c) and (d) were combined into one discussion to better fit the Program Renewal. Similarly, Appendix G CEQA significance criteria (e) and (f) were also combined into one discussion to better fit the Program Renewal.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Program would result in a significant impact on public services and utilities if it would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, or result in the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any public service: fire protection, police protection, schools, parks, or other public facilities;

B. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental impacts;

C. Have insufficient water supplies available to serve the Program and reasonably foreseeable future development during normal, dry, and multiple dry years;

D. Result in a determination by the wastewater treatment provider which serves or may serve the Program that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

E. Generate solid waste in excess of state or local standards, or in excel of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

F. Result in incompliance with federal, state, and local management and reduction statues and regulation related to solid waste.

Environmental Impacts

Impact PSU-1: New or Physically Altered Public Services Facilities, including Police, Fire, Parks, and Schools (Less than Significant)

The Program Renewal would not involve the construction of any new developments or involve any long-term activities that would result in an increased demand for public services, such as police, fire, parks, or schools, that would require new or expanded public services facilities that could cause significant environmental impacts. For these reasons, the Program Renewal would not result in any impacts to parks, schools, or other public services. The primary goals of the Program Renewal are to maintain the flow conveyance capacity of Valley Water channels and flood protection facilities and maintain the structural integrity of Valley Water flood protection facilities and lands. However, proposed maintenance activities could result in short-term effects to fire or police services, as described below. Parks and schools are not discussed further because the Program Renewal would not cause any impacts to these types of facilities.

Vegetation Management and Downed Tree Management

As mentioned in Section 3.15, "Wildfire," while vegetation management activities would be conducted to maintain defensible space around Valley Water facilities and reduce fire fuel loads and wildfire risk by removing flammable fuels, activities such as mowing, pruning, coppicing, vegetation/tree removal, and downed tree management, would require the use of internal combustion-powered equipment. In addition, activities would also require the storage of flammable and/or hazardous materials, such as fuel, that could temporarily increase fire risk or provide an ignition source. If vegetation management activities were to cause a fire, it could require a response from SCCFD, CAL FIRE, or other local fire departments, thereby diverting resources from other calls for service. The implementation of BMPs listed below would require on-site fire suppression equipment, spark arrestors on all equipment with internal combustion engines, and restrict activities on high fire danger days which would reduce impacts associated with the potential increase of fire ignition risk during maintenance and would reduce the need for fire protection services. Additionally, the removal of overgrown vegetation may reduce the potential for fire risk and the need for fire protection services.

Vehicles and heavy equipment associated with vegetation management activities, including the mechanical removal of trees, could interfere with traffic movement and impair emergency response operations. Specifically, temporary lane or road closures could impact emergency response times of police or fire services if adequate precautions are not taken. In addition, increased traffic generated by Program Renewal activities from workers traveling to and from the work site may also interfere with emergency response efforts (see Section 3.13, "Transportation," for more discussion of transportation-related impacts). To the extent feasible, work would be staged and conducted to maintain two-way traffic flow on public

roadways in the vicinity of work sites. As described in Section 3.8, "Hazards and Hazardous Materials," major arterials would serve as emergency access routes through the County as well as major highways (e.g., U.S. 101, I-280, I-880, and SR-17) in the event of an emergency requiring police or fire services. Thus, these roads could be impacted if Valley Water activities required temporary lane or road closures during maintenance activities. Implementation of the BMPs described below would reduce the potential for Program Renewal activities to impair or physically interfere with emergency response services by notifying the public of upcoming maintenance work, ensuring that emergency service providers are notified of any planned lane or road closures, implementing public safety measures to reduce impediments to traffic movement, and implementing appropriate traffic control measures in the event that temporary road or lane closures are required are implemented.

Other Maintenance Activities

Other Program Renewal activities such as bank stabilization, sediment removal, management of animal conflicts, and minor maintenance could require the use of and/or temporary storage of heavy equipment, vehicles, sediments, and other materials on or near the work site. Similar to vegetation management activities, these Program Renewal activities may require the use and/or storage of heavy equipment, vehicles, sediments, and other materials, which may require temporary road or lane closures, or lead to increased traffic generated from workers traveling to and from the work site. This could interfere with traffic movement and impair emergency response times for police and fire services if adequate precautions are not taken. Implementation of the BMPs described below would reduce the potential for Program Renewal activities to impair or physically interfere with emergency response services by notifying the public of upcoming maintenance work, ensuring that emergency service providers are notified of any planned lane or road closures, implementing public safety measures to reduce impediments to traffic movement, and implementing appropriate traffic control measures in the event that temporary road or lane closures are required are implemented. Applicable Best Management Practices

Below are summaries of the BMPs that would be implemented as part of the Program Renewal to reduce impacts to public facilities and services that could result from Program Renewal activities. A full description of each BMP is provided in Chapter 2, *Project Description*, **Table 2-10**.

Conclusion

With implementation of the above-listed BMPs, impacts on public services (including fire and police emergency response times) associated with implementation of the Program Renewal would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact PSU-2: Relocated, New, or Expanded Utilities and Service System Facilities or Disruptions of Utilities and Service System Facilities including Storm Drainage, Electric Power, Natural Gas, or Telecommunications Facilities (Less than Significant)

Buried and aboveground pipes, cables, or other utility delivery systems for wastewater, stormwater, water, natural gas, electricity, and telecommunication facilities are present within the Program Renewal Area. Stormwater pipelines and outfalls commonly are located within or near flood protection channels. Although the Program Renewal would not cause the

need for relocated, new, or expanded utilities or service system facilities, any of these utilities or service systems could potentially experience a disruption in service if Program Renewal activities accidentally damaged or interrupted the utilities' distribution or transmission systems. The Program Renewal's potential to affect utilities is further described below.

Proposed maintenance activities involving grading, digging, excavation, and other ground-disturbing activities related to sediment removal, bank stabilization, and minor maintenance activities (e.g., minor sediment removal, grading access roads and ramps) could potentially affect buried utilities that cross or are adjacent to improved channels and flood protection facilities within the Program Renewal Area. In addition, vegetation management activities could potentially affect overhead utility lines during the removal or pruning of vegetation, particularly trees. Other Program Renewal activities such as the management of animal conflicts and downed tree management would not either not be conducted in locations of underground utilities or involve ground disturbing activities that could interfere with any buried utilities.

Implementation of the BMPs described below would minimize the potential disturbed areas during maintenance work and would require Valley Water to identify the locations of utility lines that may be affected by Program Renewal activities and to minimize utility disruptions through obtaining necessary permits, verifying utility locations, and notifying all affected utility services and residents and businesses prior to initiating work. In addition, any disruptions to utilities and service systems would be temporary (i.e., temporary disruptions would last for as long as maintenance is conducted at the site) and service would be restored once maintenance is completed. Furthermore, all Program Renewal activities would result in a beneficial effect on stormwater drainage as the goals of the Program Renewal are to maintain the flow conveyance capacity, functional integrity, and operational quality and capacity of Valley Water channels and flood protection facilities.

Applicable Best Management Practices

Valley Water would implement the following BMPs as part of the Program Renewal to prevent maintenance activities from disrupting utilities and service system facilities. A description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work areas, staging areas, and access routes are kept to the minimum area necessary in order to decrease the likelihood of impacts to underground utilities.
- **BMP GEN-28: Stream Access** will ensure that crews access streams either by using existing access paths or temporary access points that will avoid utilities in the Program Renewal Area.
- BMP **GEN-43: Public Outreach** will ensure that all affected residents and businesses are notified of any temporary road closures prior to initiating work to limit potential delays or disruptions that may occur due to the closures.
- **BMP GEN-51: Investigation of Utility Line Locations** will ensure that Valley Water evaluates work areas prior to Program Renewal activities to avoid damaging or disrupting utilities. Additionally, this BMP will ensure that appropriate permits are obtained for excavating near utilities, utility locations are verified using field surveys, specifications are created which include correct procedures for excavating in the vicinity of utilities, utility services and residents are given adequate notice of upcoming

maintenance projects to allow for necessary changes/relocation of services, and disconnected cables are reconnected following the completion of activities.

Conclusion

With implementation of the BMPs listed above, the impact of disruptions to utilities and service system facilities resulting from implementation of the Program Renewal would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact PSU-3: Effects on Wastewater Treatment Demand and Water Supply (Less than Significant)

The Program Renewal would not involve the construction of any new or expanded housing or other occupied buildings that would require the expansion of water or wastewater systems or new water and wastewater facilities. However, there may be some minor impacts on water or wastewater facilities caused by Program Renewal activities. Maintenance workers would use a nominal amount of water associated with portable restrooms and handwashing stations. Additionally, a small quantity of wastewater would be generated from the portable restrooms, which would be off hauled by Valley Water or a contractor to an appropriate disposal facility. This limited amount of water and wastewater usage and disposal would not notably impact the capacity of local water supply or wastewater treatment facilities in the County, require construction of new or expanded water or wastewater facilities.

Water would also be necessary for various maintenance tasks, which are detailed further below. No other Program Renewal activities would produce wastewater.

Bank Stabilization Activities

Potential activities related to bank stabilization that may require water include vehicle cleaning, sediment/soil watering related to dust control activities, and irrigation of bank revegetation sites. Newly planted vegetation or hydroseeding associated with bank repairs may require irrigation until the plants became established. The amount of water needed for irrigation of these sites cannot be quantified at this time because bank stabilization activities are not projected activities, and the specific vegetation types and final quantities to be planted at each site would be determined depending on the size and scale of activities. However, vegetation installed as part of revegetation would match that in the area adjacent to the bank repair to minimize the use of natural resources (e.g., water). Therefore, it is anticipated that Valley Water water trucks and supplies would be used to meet the limited water demands related to bank stabilization activities. Other methods of meeting water demands may include tie-ins to Valley Water water meters or, at irrigation sites with limited access, use of a technology that would release water to a plant's roots over an extended period. These activities would not require the construction of any new or expanded long-term water distribution or supply facilities.

Other Maintenance Activities

Other maintenance activities such as sediment removal, management of animal conflicts, vegetation management, and minor maintenance activities may also require water for vehicle

cleaning and dust control. Grazing may also require water for the goats; however, the amount of water needed is expected to be minimal and would not require the construction of new or expanded long-term water distribution or supply facilities.

Applicable Best Management Practices

BMPs that Valley Water would implement as part of the Program Renewal to minimize effects on the existing water supply are summarized below. A description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that soil disturbance is kept to the minimum footprint necessary, which will decrease the amount of water needed for dust control activities and the irrigation of bank revegetation sites.
- **BMP GEN-38: Vehicle Cleaning** will ensure that vehicles are cleaned only as needed to help minimize the amount of water that will be used.

Conclusion

A small quantity of wastewater would be generated from portable restrooms, which would be off hauled by Valley Water or a contractor to an appropriate disposal facility. Proposed maintenance activities would require limited quantities of water for portable restrooms/hand washing stations, grazing, dust control, irrigation, and vehicle cleaning. Water demands would be met with existing Valley Water supplies and would be generally trucked into work sites, as necessary. Therefore, sufficient water supplies would be available for the Program Renewal. Based on the above analysis, wastewater and water supply impacts would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact PSU-4: Exceedance of Landfill Capacity or Non-Compliance with Regulations Related to Disposal of Excavated Sediment or Other Materials (Less than Significant)

Solid waste generated by the Program Renewal maintenance activities would include excavated sediment from flood protection facilities; vegetative debris from vegetation management activities; and trash and debris from other maintenance activities.

Although Valley Water does not have a projection for the volume of sediment, vegetation and trash to be removed under SMP-3, as stated above in "Valley Water Sediment, Trash, and Vegetation Removal," past data indicates that an average of approximately 40,281 cubic yards of sediment, 13, 433 cubic yards of trash, and 3,360 cubic yards of vegetation was removed per year from 2014 to 2022 (Lewis, pers. comm., 2024). Sediment removal volumes would likely remain similar under SMP-3 compared to work conducted previously; thus, it is estimated that the Program Renewal would remove between 4,090 cubic yards and 83,792 cubic yards of sediment (approximately 6,135 to 125,688 tons[6]) per year.

As described in Chapter 2, *Project Description*, removed sediment would be tested and undergo evaluation to determine whether hazardous levels of contaminants are present according to the SMP's Sediment Characterization Plan (refer to Attachment F of the SMP

[6] Estimate of tons is approximate and variable (basis for estimate is 1.5 tons per cubic yard). Sediment weight in a given volume is dependent on several factors including moisture content, particle size, and density.

Manual [**Appendix A** of this DSEIR]). Sediment that meets reuse criteria could be reused for restoration purposes, while sediment that does not meet reuse criteria but is not considered hazardous, would be disposed of at a local Class III landfill, either as waste or used for beneficial purposes (i.e., cover material). As shown in Table 3.11-1, the overall capacities and daily/yearly constraints of existing Class III landfills in Santa Clara County would be sufficient to serve the disposal needs of the Program Renewal.

If sediment is considered hazardous, it would be disposed of at an appropriate Class I facility (e.g., Kettleman Hills hazardous waste landfill). As noted above, The Kettleman Hills hazardous waste landfill can hold about 10.7 million cubic yards but is accepting only minimal hazardous waste as it is near capacity (Waste Management, n.d.). The Buttonwillow Landfill, near Bakersfield, has a capacity of 13,250,000 cubic yards and is not expected to reach full capacity until 2040, making it suitable for accepting hazardous waste that could come from the Program Renewal (CalRecycle, n.d.). Sufficient capacity would be available at the Buttonwillow Landfill to meet Valley Water's needs for hazardous waste disposal over the life of the Program Renewal.

Vegetative debris generated from vegetation management activities would be disposed of at any one of the Class III landfills shown in Table 3.11-1, above. It is estimated that the Program Renewal would remove approximately 1,008 tons of vegetation debris, per year, which was the average amount of vegetation debris disposed of at landfills from SMP activities between 2019 and 2024[7], as shown above (Lewis, pers. comm., 2024). The amount of vegetation removed under SMP-3 would be similar to the amount removed under SMP-2.

Trash, including that generated by the encampments, which is removed from creeks and surrounding lands as part of Valley Water's work would result in approximately 13,433 cubic yards of trash per year based on the average amount that Valley Water removed between fiscal year 2013-14 and fiscal year 2023-2024 (Lewis, pers. comm., 2024). In addition, maintenance crews would also generate a nominal amount of waste associated with food, wrappers, etc. Waste generated from these activities would be disposed at any of the five Class III landfills listed in Table 3.11-1 and would not represent a significant portion of available landfill capacity. As such, the landfills in Santa Clara County would have sufficient capacity to serve the needs of the Program Renewal.

Furthermore, the implementation of BMPs GEN-4, GEN-20, and VEG-1 would decrease the soil waste generated during Program Renewal activities by minimizing the area of soil disturbance, limiting the amount of sediment/soil that would need to be disposed of off-site during hazard tree removals, and minimizing local erosion from in-channel vegetation removal. Soil removal has historically been the largest type of waste generated during Valley Water Maintenance activities; consequently, reducing the amount of soil for disposal during Program Renewal activities would adhere to federal, state, and local laws, regulations, and policies aimed at minimizing landfill waste. Specifically, Program Renewal activities would comply with AB 341 of the California Integrated Waste Management Act, the Santa Clara County Integrated Waste Management Plan (CIWMP), Santa Clara County Zero Waste 2020 Vision, and local General Plans. All of these state and local laws, regulations, and policies aim to reduce the amount of waste that ends up in landfills through source reduction and reuse,

[7] Prior to 2019, the quantity of vegetation removed was recorded in terms of dump fees, but not in terms of tons. This information is based on mean annual tons of vegetation taken to landfills from fiscal year 2019 through fiscal year 2024.

recycling and composting, and transformation. Therefore, impacts related to the exceedance of landfill capacity or non-compliance with regulations related to disposal of excavated sediment or other materials would be less than significant. Applicable Best Management Practices

BMPs would be implemented as part of the Program Renewal to minimize impacts related to exceeding landfill capacity and to ensure compliance with regulations related to disposal. Summaries of these BMPs are discussed below. A description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-3**: **Avoid Exposing Soils with High Mercury Levels** will ensure that soil from creeks that contain mercury will first be remediated. If remediation is not sufficient and soils continue to contain mercury that exceeds 0.2 milligrams per kilogram of erodible sediment, the soil will be removed and disposed of in a Class I landfill.
- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the amount of excavated soil is minimized, which will decrease the amount of excavated sediment that will need to be hauled off-site.
- **BMP GEN-20: Hazard Tree Removal** will ensure that no soil disturbance will occur during hazard tree remediation (aside from superficial disturbance of ground surface), which will limit the amount of sediment/soil that will need to be disposed of off-site.
- **BMP GEN-29: On-Site Hazardous Materials Management** will ensure that any hazardous waste is correctly managed and disposed of through the proper channels.
- **BMP GEN-30: Existing Hazardous Materials** will ensure that any hazardous materials found within the Program Renewal Area during work activities are disposed of according to the appropriate regulatory requirements.
- **BMP GEN-34: Existing Hazardous Sites** will ensure that Valley Water conducts a search for known contaminated sites prior to ground-disturbing activities. If a hazardous site is identified, the proper contacts will be notified.
- **BMP SED-5: Sediment Characterization** will ensure that sediment removed during Program Renewal activities will be properly characterized and reported in Valley Water's annual summary report.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** will ensure that the potential for localized erosion is minimized as much as possible by protecting the toe of the bank and leaving vegetation in place in order to decrease the total amount of sediment removal needed.

Conclusion

Known landfill facilities would be able to accommodate the volume of sediment and other materials generated by the Program Renewal, and Program Renewal activities would comply with all applicable federal, state, and local solid waste management and reduction regulations such as AB 341 of the California Integrated Waste Management Act, the CIWMP, Santa Clara County Zero Waste 2020 Vision, and local General Plans. With implementation of the above-listed BMPs, this impact would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

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3.12 Traffic and Transportation

3.12.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) related to traffic and transportation.

3.12.2 Regulatory Setting

Various levels of government or regulatory authority are responsible for some or all aspects of the planning, implementation, operations, and maintenance of transportation facilities and services in the Program Renewal Area. The following subsections discuss federal and state laws and regulations that pertain to traffic and transportation for the Program Renewal. Applicable local plans, policies, regulations, and ordinances related to traffic and transportation are included in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C discusses several plans throughout the County and local jurisdictions that contain relevant programs, projects, strategies, goals and policies to maintain and improve transportation systems, including streets/roadways and parking areas, bicycling and pedestrian networks, and transit systems. Appendix C also discusses plans and programs of the Santa Clara Valley Transportation Authority, which is an independent special district that works with the County and the 15 jurisdictions on the transition from level of service (LOS) to vehicle miles traveled (VMT).

Federal Plans, Policies, Regulations, and Laws

There are no federal laws or requirements for transportation that are applicable to the Program Renewal.

State Plans, Policies, Regulations, and Laws

Senate Bill 743

Senate Bill (SB) 743 of 2013 designates VMT, rather than LOS, as the performance metric to be used for the analysis of transportation impacts under the California Environmental Quality Act (CEQA). SB 743 was signed into law in 2013 and CEQA Guidelines implementing SB 743 took effect in July 2020, requiring agencies analyzing transportation impacts of new projects after that date to use VMT rather than LOS. SB 743 aligns transportation impact analyses and mitigation outcomes with the state's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through the development of multimodal transportation networks.

According to the U.S. Environmental Protection Agency, the transportation sector was responsible for nearly 29 percent of all GHG emissions in the United States in 2021 (USEPA 2021), and transportation in California was responsible for about 39 percent of statewide GHG emissions in 2021 (CARB 2023). Transportation, represented by vehicle trips and quantified by VMT, moves goods; provides public services; and connects people with work, school, shopping, and other activities. VMT relates directly to how much fuel is being burned

by vehicles and is therefore also reflective of the quantity of greenhouse gas emissions and air pollutants being released.

Pursuant to SB 743, CEQA Guidelines Section 15064.3 includes guidance geared toward the effects of long-term VMT (i.e., project operations) rather than short-term VMT (i.e., project construction), providing a framework for evaluating the former while stating that "a qualitative analysis of construction traffic may be appropriate."

Technical Advisory on Evaluating Transportation Impacts in CEQA

To assist lead agencies with SB 743 implementation, the California Governor's Office of Planning and Research (OPR) published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory), which provides guidance about the variety of implementation questions agencies face when shifting from an analysis of LOS to a VMT metric (Governor's Office of Planning and Research 2018). The Technical Advisory focuses on two types of projects that could be expected to generate long-term VMT: land use projects (e.g., residential, office, retail) and transportation projects that expand capacity for motor vehicles. Valley Water's Program Renewal evaluated in this document is neither a land use project nor a transportation project.

3.12.3 Environmental Setting

This section discusses the physical transportation system that provides access to Valley Water facilities.

Roadway Network

Santa Clara County's transportation network is comprised of freeways, expressways, arterial roadways, collector roadways, and local streets (**Figure 3.12-1**). Freeways are designed for low accessibility (limited connections to other facilities provided by grade-separate interchanges) and high mobility (throughput of traffic movement). Conversely, local streets are designed for high accessibility (access to adjacent properties) and low mobility. Other roadways fall in between these two roadway types. Santa Clara County's main vehicular roadway types are described below.

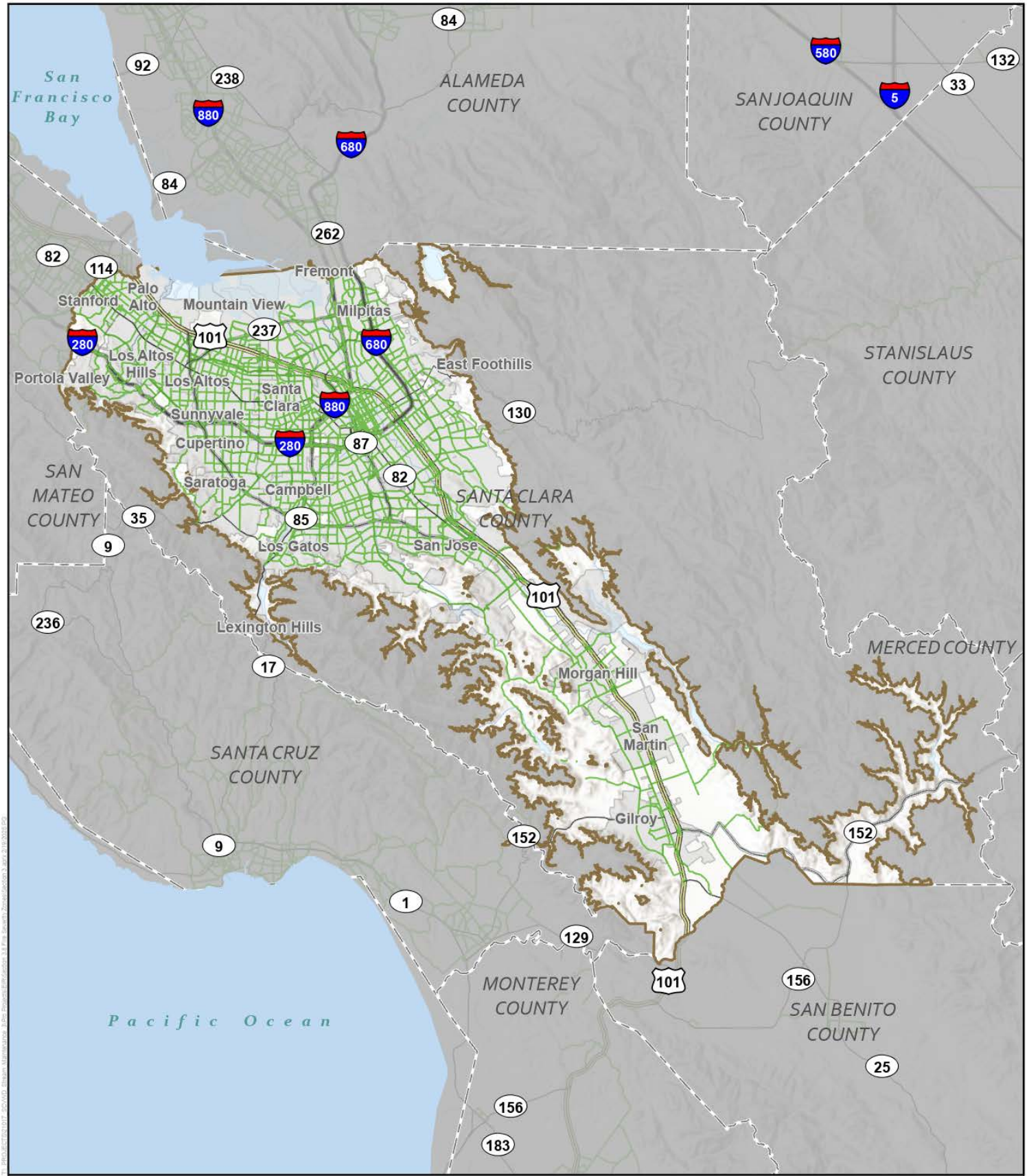

Figure 3.12-1
Major Roadways in Program Renewal Area

Source: State of California GIS Services, https://services.gis.ca.gov/arcgis/rest/services

MONTROSE ENVIRONMENTAL

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

Freeways

U.S. Highway 101 (U.S. 101) is a north-south freeway in Santa Clara County. The freeway includes four mixed-flow lanes per direction, including high-occupancy vehicle (HOV) lanes during peak periods. HOV lanes, also known as diamond or carpool lanes, restrict use to vehicles with two or more persons (carpools, vanpools, and buses) or motorcycles during the peak morning (5:00 a.m. to 9:00 a.m.) and evening (3:00 p.m. to 7:00 p.m.) commute periods. Northbound U.S. 101 is generally the peak morning commute direction, and southbound U.S. 101 is the peak evening commute direction. U.S. 101 extends through the county, from south of Gilroy to north of Palo Alto via downtown San Jose and Mountain View.

Interstate 280 (I-280) is a north-south freeway extending from the U.S. 101 interchange in San Jose north to San Francisco. East of the U.S. 101 interchange, I-280 is designated as I-680. The freeway includes four to five mixed-flow lanes in each direction, including HOV lanes north of the I-280/I-880/State Route (SR) 17 interchange. The peak commute directions on I-280 are northbound in the morning and southbound in the evening. I-280 extends through the county, between approximately Alpine Road in Palo Alto and U.S. 101 in San Jose via Cupertino.

Interstate 680 (I-680) is a north-south freeway extending from the I-280/I-680/U.S. 101 interchange in San Jose north to Solano County. Within the county, the freeway includes four mixed-flow lanes in each direction. Peak commute directions on I-680 are southbound in the morning and northbound in the evening. From the north, I-680 enters Santa Clara County at the northern Milpitas city limit.

Interstate (I-880) is a north-south freeway extending from San Jose at the I-280/I-880/SR 17 interchange to Oakland. This facility includes three to four mixed-flow lanes in each direction. Northbound is the peak commute direction in the morning, and southbound is the peak commute direction in the evening. I-880 enters Santa Clara County from the north at the northern Milpitas city limit.

SR 17 is a north-south freeway extending from San Jose at the I-280/I-880/SR 17 interchange to Santa Cruz. The facility includes two to three mixed-flow lanes in each direction. Northbound is the peak commute direction in the morning, and southbound is the peak commute direction in the evening. SR 17 exits Santa Clara County at Skyline Boulevard in the Santa Cruz Mountains south of Los Gatos.

SR 85 is a north-south freeway extending through the county from the SR 85/U.S. 101 interchange in Mountain View to the SR 85/U.S. 101 interchange in south San Jose via Los Gatos and Saratoga. This facility includes three to four mixed-flow lanes in each direction, including HOV lanes during peak periods. Northbound is the peak commute direction in the morning, and southbound is the peak commute direction in the evening. The freeway is located entirely within Santa Clara County.

SR 87 is a north-south freeway extending from the SR 85/SR 87 interchange in south San Jose to the U.S. 101/SR 87 interchange north of downtown San Jose. This facility includes three mixed-flow lanes in each direction, including HOV lanes during peak periods. Northbound is the peak commute direction in the morning, and southbound is the peak commute direction in the evening. SR 87 is located entirely within the City of San Jose.

SR 237 is an east-west freeway extending between Mountain View and Milpitas. This freeway includes three mixed-flow lanes in each direction, including HOV lanes during peak periods. Traffic is evenly split between the eastbound and westbound commute directions during both the morning and evening commute times. The freeway is located entirely within Santa Clara County.

Conventional State Highways

This type of roadway facility is operated and maintained by Caltrans. In general, state highways have a primary function of traffic movement. However, some locations have a reduced emphasis on vehicle mobility, such as The Alameda, because its characteristics include numerous access points and fronting uses for the neighborhood business district. Caltrans has designated the following state highways in Santa Clara County:

- SR 9 (Saratoga-Los Gatos Road/Big Basin Way/Congress Springs Road)
- SR 82 (Monterey Road/The Alameda/El Camino Real)
- SR 130 (Alum Rock Avenue/Mt. Hamilton Road)
- SR 152 (Pacheco Pass Road/1st Street/Leavesley Road/Hecker Pass Highway)
- SR 25 (Hollister Road)
- SR 237 (Calaveras Boulevard) east of I-880

Expressways

Expressways are facilities designed primarily for traffic movement, and they provide limited access to abutting properties. These facilities generally include median areas dividing traffic directions, some intersecting streets allowing only right-turn access, some grade-separated interchanges, and some signalized intersections allowing full access. Expressways in the county are maintained and operated by the Santa Clara County Roads and Airports Department. The department controls access to and operation of traffic signals on each of these facilities. Expressways located in Santa Clara County include:

- Almaden Expressway
- Capitol Expressway
- Central Expressway
- Foothill Expressway
- Lawrence Expressway
- Montague Expressway
- Oregon Expressway
- San Tomas Expressway
- Southwest Expressway

Arterial Roadways

Arterial roadways are facilities that accommodate major movements of traffic not served by freeways, expressways, or state highways. They are designed mainly for the movement of through traffic; providing access to abutting properties is a secondary function. Although abutting properties have access to the facilities, parking and loading may be restricted or prohibited to improve the capacity for moving traffic. The number of lanes on this type of facility depends on its function, its location, and the volume of traffic it is expected to handle; however, arterials generally are planned to have four or more travel lanes. Selected arterial

roadways in Santa Clara County include Blossom Hill Road, De Anza Boulevard, Mathilda Avenue, Middlefield Road, San Antonio Road, Santa Teresa Boulevard, and Stevens Creek Boulevard.

Collector Roadways

Collector roadways are facilities that serve internal traffic movements within a specific area or neighborhood and provide connections to the arterial street system. Collectors typically do not serve through trips but provide access to abutting properties and connections from local streets. Traffic control devices may be installed to protect or facilitate traffic on a collector street. Some examples of collectors in Santa Clara County are Foxworthy Avenue, Llagas Road, Miramonte Avenue, Monroe Street, Pierce Road, Ruby Avenue, and Stelling Road.

Local Streets

Local streets are facilities with the primary function of providing access to immediately adjacent properties. Most streets in Santa Clara County are local streets that provide access to residential and commercial properties.

Emergency Response and Evacuation Routes

Several main highways run through the Program Renewal Area that serve as both key evacuation and emergency access routes in times of emergency. Although evacuation routes are not specifically identified in the Santa Clara County General Plan (1994), the Multijurisdictional Hazard Mitigation Plan (MJHMP) and the Safety Element of the General Plan are being updated concurrently, and these updates will include an evacuation assessment (Santa Clara County 2024a). The current MJHMP (Santa Clara County 2024b) and Safety and Noise General Plan element also establish policies and procedures to ensure the effective management of emergency operations and preparedness within Santa Clara County. In general, major arterials (such as El Camino Real, Lawrence Expressway, and Capitol Expressway) would serve as evacuation routes through the county, and major highways providing regional access, such as U.S. 101, I-280, SR-87, and SR-17, also would be used in the event of a large-scale evacuation.

Public Transit

Existing public transit service within the county is provided by the Santa Clara Valley Transportation Authority (VTA) and consists of bus, light rail transit, and paratransit service. Commuter rail service is provided by Caltrain, the Altamont Commuter Express, and Amtrak's Capitol Corridor[1]. These services are described in **Table 3.12-1.**

[1] Amtrak is one of the local partners that helps deliver the Capitol Corridor service.

Table 3.12-1. Transit Service within Santa Clara County

Provider (Operator)	Service	Rail Stop Examples	Extent of Service	Frequency
Santa Clara Valley Transportation Authority (VTA)	Local, limited-stop, express, and rapid bus; Light rail transit	Santa Teresa, Alum Rock, Winchester, Convention Center, Mountain View	Santa Clara County	Varies for bus service; Light rail headways range from 15 to 45 minutes
VTA ACCESS	Paratransit	Not available	Santa Clara County	During the same hours of the day and days of the week that bus and light rail trains run their regular, holiday, and Sunday routes
Caltrain (Peninsula Joint Powers Board)	Commuter Rail	Sunnyvale, San Jose Diridon, Tamien, Gilroy	San Francisco to Gilroy	Weekday headways 30 to 60 minutes; Weekend headways 60 minutes
Altamont Commuter Express (San Joaquin Regional Rail Commission)	Commuter Rail	Great America, San Jose Diridon	Stockton to San Jose	Four eastbound and four westbound trains, 60-minute headways, commute periods only
Amtrak's Capitol Corridor (Capitol Corridor Joint Powers Authority)	Commuter Rail	Great America, San Jose Diridon	Auburn to San Jose	Seven southbound and seven northbound trains

Sources: Santa Clara VTA 2023, ACCESS 2023, Caltrain 2023, ACE 2023, Capitol Corridor 2023

Pedestrian Circulation

Pedestrian facilities improve safety for pedestrians and can encourage the use of alternative modes of transportation. These facilities include sidewalks, paths, pedestrian bridges, crosswalks, and pedestrian signals with crosswalks at signalized intersections to accommodate pedestrian circulation. In California, it is legal for pedestrians to cross any street, except at unmarked locations between immediately adjacent signalized crossings or where crossing is expressly prohibited. Marked crossings reinforce the location and legitimacy of a crossing. Santa Clara County's pedestrian network consists of sidewalks, multi-use paths/trails, and both grade-separated and at-grade crossings. The county has many areas that are especially conducive to walking for recreation and transportation, particularly in downtown areas and along off-street paths, including those located in parks.

Bicycle Circulation

The typical California standards for bikeways, described in Chapter 1000, "Bicycle Transportation Design" in the Caltrans *Highway Design Manual* (2020), include four distinct types of bikeway facilities.

Bike paths (Class I) are paved pathways separated from roadways that are designated for the exclusive use of bicycles, pedestrians, and other non-motorized means of transport. In general, bike paths serve corridors that are not served by streets and highways or where sufficient right-of-way exists to allow such facilities to be constructed away from the influence of parallel streets and numerous vehicle conflicts. Examples include the Coyote Creek Trail, Los Gatos Creek Trail, San Tomas Aquino Creek Trail, and the Stevens Creek Trail, all of which have asphalt or concrete surfaces.

Bike lanes (Class II) are lanes for bicyclists adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bike lanes are usually constructed to better accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets. Example bike lanes include those on Campbell Avenue, Curtner Avenue, De Anza Boulevard, Dunne Avenue, Fremont Avenue, Los Gatos Boulevard, Milpitas Boulevard, Reed Avenue, Saratoga Avenue, Page Mill Road, and Santa Teresa Boulevard.

Bike routes (Class III) in general are located on low traffic volume streets that provide alternate routes for recreational users, and in some cases, for commuter and school-age cyclists. These facilities are signed for bike use but have no separated bike right-of-way or lane striping. Bike routes serve to either provide continuity to other bicycle facilities or designate preferred routes through high-demand corridors. Examples include bike routes on Benton Street, Covington Road, Mary Avenue, and Meridian Avenue. Some routes, such as San Fernando Street between SR 87 and San Jose Diridon Station (where additional width for bike lanes was not available), feature "sharrow" symbols installed on the pavement to designate the appropriate travel path for cyclists and increase driver awareness of bicycles. Other routes, such as Bryant Street in Palo Alto, are designated as "Bicycle Boulevards" that employ traffic calming measures to encourage bicycle use of the street but discourage automobile through trips.

Separated Bikeways (Class IV) are bikeways for the exclusive use of bicycles and include separations required between the separated bikeway and the through vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible posts, inflexible barriers, or on-street parking.

3.12.4 Impact Analysis

Methodology

This section describes the methods used to determine whether the Program Renewal would result in significant impacts related to traffic and transportation, as evaluated based upon the significance criteria included in the section below. The existing baseline conditions used in this analysis were the existing conditions at the time of 2022 NOP publication. This baseline was considered appropriate because it reflects traffic conditions expected to continue for the duration of the Program Renewal activities, and because it captures conditions under which the current metric for evaluating transportation impacts, vehicle miles traveled, was being applied. This analysis therefore evaluates the traffic and transportation impacts of the Program Renewal by evaluating any incremental change in maintenance activities as compared to the 2022 baseline. In other words, this impact analysis evaluates if there will be any change in vehicle trips generated and resulting VMT between what was estimated at the time of the 2022 NOP publication and what is estimated for the Program Renewal.

Vehicle Trips Generated and Vehicle Miles Traveled

VMT is calculated based on average length of anticipated daily or annual vehicle trips generated by a proposed project. The amount of vehicle trips generated and resulting VMT can be obtained through historical maintenance activity records and estimates of average trip lengths, or through the use of a validated travel demand model that estimates vehicle demand. Valley Water used the former method to estimate maintenance vehicle trips generated by existing Stream Maintenance Program (SMP-2) activities, based on the program's service area, estimated annual gross sediment removal totals, a defined dry season maintenance window, typical off-haul truck capacity, and typical loading rates and procedures.

Valley Water estimates that operation of SMP-2 at the time of the 2022 NOP publication involved approximately 39,270 annual one-way light- and medium-duty maintenance vehicle trips, and 8,568 annual one-way heavy-duty maintenance truck trips (Lewis, pers. comm., 2023 and 2024). Estimates of the number of trips were made based on consultation with managers of Valley Water work units that are responsible for field operations, vegetation management, environmental compliance, and engineering. Work unit managers provided estimates of the number of trips per year associated with their staff based on their records and/or experience in scheduling and managing work. These estimates were then aggregated. To determine the average trip distance, the locations of all SMP-2 Notice of Proposed Work (NPW) item project sites were plotted in ArcGIS. The mean driving distance between Valley Water Headquarters (the most frequent point of departure for trips) and those work sites was then calculated. See **Appendix I** for more detail regarding these calculations.

Criteria for Determining Significance

For the purposes of this analysis, the Program Renewal would result in a significant impact on traffic and transportation if it would:

A. Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities;
B. Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b);
C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
D. Result in inadequate emergency access.

The transportation impact criteria listed above were evaluated using the methodology outlined below:

A proposed project would pose a significant impact if it would conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities. Appendix C describes the general plans and local/regional programs, plans, ordinances, and policies applicable to this analysis. To determine the consistency of the Program Renewal with relevant transportation programs, plans, ordinances, or policies, the following significance thresholds were applied to each respective mode of travel—transit, roadways, bicycle facilities, and pedestrians:

- Degrades the safety or operation of existing facilities by substantially increasing passenger vehicle and truck volumes; or

- Precludes implementation of planned facilities.

With respect to a conflict with CEQA Guidelines Section 15064.3(b) as it pertains to VMT, a change in vehicle trips from implementation of the Program Renewal would be associated primarily with a change in daily maintenance vehicle trips due to a change in maintenance activities.

With respect to hazards, a project would result in a significant impact if there would be a substantial increase in hazards due to a geometric design feature or incompatible uses. For purposes of this analysis, a significant impact would occur if one or both of the following statements are true:

- The project proposes modifications to a public road or would require the use of access points that would create a hazard for any or all modes of travel (e.g., locating a temporary or permanent driveway on a blind curve).
- The project would increase truck traffic on public roads that would degrade pavement quality and potentially create a hazard for any or all modes of travel (e.g., gravel left in the roadway that results in vehicles or bicyclists sliding).

With respect to emergency access, a project would result in a significant impact if it would result in inadequate emergency access, such as obstructions in the roadway, or would otherwise substantially affect emergency response times.

Structure of Impact Discussion

Because traffic and transportation impacts would be the result of maintenance activities Program Renewal-wide, the impact analysis is not separated into specific work activities. The following analysis includes operational impacts from all components of Program Renewal maintenance, including work in vegetation field operations, watershed field operations, engineering support, and environmental support units.

Environmental Impacts

Impact TR-1: Conflict With a Program, Plan, Ordinance, or Policy Addressing the Circulation System Including Transit, Roadway, Bicycle, and Pedestrian Facilities (Less than Significant)

New updates that are proposed for the Program Renewal would affect the circulation system in a similar way as the existing program (SMP-2). Like SMP-2, the Program Renewal could interfere with planned bicycle facilities or conflict with/create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards. It could also conflict with plans for traffic flow on existing roadways. Furthermore, secure and safe bicycle parking could become temporarily unavailable at specific work sites, and work activities may affect bicycle facilities and require temporary lane closures.

Temporary sidewalk closures related to proposed maintenance work activities could cause short-term interference with planned pedestrian facilities, change accessible pedestrian facilities that meet current ADA best practices, or create inconsistencies with adopted pedestrian system plans, guidelines, policies, and standards.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to reduce impacts on the circulation system, including transit services and facilities, bicycle facilities, and pedestrian facilities. Full descriptions of each BMP are provided in Chapter 2, *Project Description*, **Table 2-10**.

- **BMP GEN-43: Public Outreach** will ensure that the public is informed about maintenance work. Valley Water will distribute notices to neighborhoods, provide notification to local governments (cities and county), and post information on the Valley Water Program Renewal website. For high-profile projects, at Valley Water's discretion, signs will be posted in neighborhoods to notify the public of maintenance schedules, trail closures, and road/lane closures.
- **BMP GEN-44: Implement Public Safety Measures** will ensure that signage is posted in public access areas and near recreational trails to warn the public about maintenance work. Advance signage will be posted for temporary road closures and temporary fencing will be installed above bank repair sites. If necessary, Valley Water will provide personnel to provide traffic control and site security.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measures** will ensure that traffic flow is maintained. If temporary lane closures are necessary or traffic flow is going to be affected, Valley Water will coordinate with the appropriate jurisdictional agency to try and schedule work to occur outside of peak traffic hours. Bicycle and pedestrian facilities closures will be scheduled outside of peak hours to the maximum extent practicable. If public transit access and routes will be affected by temporary road closures and require detours, Valley Water will contact the affected transit authorities.

Conclusion

Because of the temporary nature of the maintenance activities, and with implementation of these BMPs, the Program Renewal would not conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities. As described, BMPs would ensure that the public is informed about maintenance work, public safety measures are taken to warn the public about maintenance work, and that traffic flow is maintained during Program Renewal-related maintenance activities. Impacts would be **less than significant,** and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact TR-2: Conflict with CEQA Guidelines Section 15064.3, subdivision (b) (Less than Significant)

Implementation of the Program Renewal would include work in vegetation field operations, watershed field operations, engineering support, and environmental support units.

As described earlier in this section under Methodology, Valley Water estimates that operation of SMP-2 at the time of the 2022 NOP publication involved approximately 39,270 one-way light- and medium-duty maintenance vehicle trips per year and 8,568 one-way heavy-duty maintenance truck trips per year. Valley Water also estimates that the Program Renewal

would result in the same number of annual vehicle and truck trips that occurred under this baseline condition, including existing maintenance trips under SMP-2 that would continue under the Program Renewal (Lewis, pers. comm. 2023 and 2024) (see Appendix I for detail related to calculation of these estimates). This results in no change in vehicle trips as compared to existing conditions. The service area for the Program Renewal has not changed since implementation of SMP-2, so the same average trip length (16.1 miles, see Appendix I) from SMP-2 was applied, resulting in approximately 770,192 VMT annually, for both existing and Program Renewal conditions.

Conclusion

Program Renewal-generated traffic would be distributed across the service area, resulting in the same average trip lengths that currently take place under SMP-2. The same number of annual maintenance vehicle trips is estimated to occur under the Program Renewal as under existing conditions, resulting in no overall change in VMT. For these reasons, the Program Renewal would not result in an increase in operational VMT relative to existing operational VMT. Impacts related to potential conflict with CEQA Guidelines Section 15064.3(b) would be **less than significant,** and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact TR-3: Substantially Increase Hazards due to Geometric Design Features and Incompatible Uses or Result in Inadequate Emergency Access (Less than Significant)

The Program Renewal's maintenance activities which could require the use and/or temporary storage of heavy equipment, vehicles, sediments, and other materials near or on the work site may require temporary lane closures, which could hinder emergency response times. These closures, though temporary and highly localized, may also increase safety risks by forcing lane changes that would not be made otherwise. To the extent feasible, work would be staged and conducted to maintain two-way traffic flow on public roadways in the vicinity of work sites. As described above, major arterials would serve as evacuation routes through the County as well as major highways (e.g., U.S. 101, I-280, I-880, and SR-17) in the event of a large-scale evacuation. Thus, these roads could be impacted if Valley Water activities required temporary lane or road closures during maintenance activities.

Implementation of BMPs summarized below would minimize impacts on emergency access and evacuation during maintenance work. Valley Water would be required to notify the public about maintenance work which would help to reduce the amount of people on public roadways and improve emergency response times. Additional public safety measures would be implemented, such as signage and temporary fencing, to warn the public about the maintenance work. If temporary lane closures are necessary or traffic flow is going to be affected, Valley Water would also coordinate with emergency service providers in areas where maintenance activities may affect traffic flow to ensure that emergency vehicle access and response times will not be impeded.

Applicable Best Management Practices

The BMPs summarized below would continue to be implemented as part of the Program Renewal to reduce impacts on emergency access. Full descriptions of each BMP are provided in Chapter 2, *Project Description*, **Table 2-10**.

- **BMP GEN-43: Public Outreach** will ensure that the public is informed about maintenance work. Valley Water will distribute notices to neighborhoods, provide notification to local governments (including local fire districts), and post information on the Valley Water SMP website. For high profile projects, at Valley Water's discretion, signs will be posted in neighborhoods to notify the public of maintenance schedules, trail closures, and road/lane closures.
- **BMP GEN-44: Implement Public Safety Measures** will ensure that signage and temporary fencing are installed to help reduce impediments to traffic movement or evacuation routes in the case of an emergency.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measures** will ensure that traffic flow is maintained. If temporary lane closures are necessary or traffic flow is going to be affected, Valley Water will coordinate with the local emergency service providers to ensure that there is emergency vehicle access and that response times are not impeded.

Conclusion

Because of the temporary nature of the maintenance activities, and with implementation of these BMPs, the Program Renewal would not substantially increase hazards due to geometric design features or incompatible uses and would not result in inadequate emergency access. As described, BMPs would ensure that the public is informed about maintenance work, that public safety measures are taken to warn the public about maintenance work, and that traffic flow is maintained during construction. Impacts would be **less than significant,** and no mitigation would be required.

Mitigation Measures: No mitigation is required.

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3.13 Tribal Cultural Resources

3.13.1 Introduction

This section presents the regulatory setting, setting, and potential impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) as related to tribal cultural resources.

Tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources, or resources a lead agency chooses to treat as a tribal cultural resource based substantial evidence.

Area channels, access roads, and other features under the maintenance authority of the Valley Water. The study area was used to help determine general areas of sensitivity, which is discussed in Section 3.13.3, "Environmental Setting."

Program Renewal Area

The Program Renewal Area includes channels, access roads, and other features maintained by Valley Water that require activities outlined in the Stream Maintenance Program Manual (provided in **Appendix A**) such as sediment removal, vegetation management, bank stabilization, management of animal conflicts, minor maintenance (e.g., fence installation and repair, trash and debris removal), and large woody debris management. If present, a large number of previously identified tribal cultural resources located within an activity area would indicate an elevated level of sensitivity, suggesting increased likelihood that Program Renewal activities could cause adverse impacts to significant tribal cultural resources.

3.13.2 Regulatory Setting

The following subsections discuss federal and state laws and regulations that pertain to tribal cultural resources for the Program Renewal. There are no local regulations specifically related to tribal cultural resources.

Federal Plans, Policies, Regulations, and Laws

There are no federal laws or regulations specifically related to tribal cultural resources. Section 106 of the National Historic Preservation Act (NHPA) considers historic properties, which also includes traditional cultural properties.[1] Section 3.5.2 in Section 3.5, "Cultural Resources," provides a summary of Section 106 of the NHPA.

[1] A *traditional cultural property* is a property that is eligible for inclusion in the National Register of Historic Places (National Register) based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community.

State Plans, Policies, Regulations, and Laws

Public Resources Code Section 21074 (AB 52)

Public Resources Code (Pub. Res. Code) Section 21074 and Pub. Res. Code Section 21083.09 (codified from Assembly Bill [AB] 52) require lead agencies to analyze project impacts on tribal cultural resources.

The law defines tribal cultural resources in section, Pub. Res. Code Section 21074. Tribal cultural resources are either: 1) 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:

- 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,
- 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 Resources Code section 5024.1, the lead agency (in this case Valley Water) must consider the significance of the resource to a California Native American tribe.

Public Resources Code Section 21084.2 provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment.

AB 52 also requires lead agencies are required to engage in consultation with California Native American tribes (Pub. Res. Code Sections 21080.3.1, 21080.3.2, and 21082.3). Public Resources Code Section 21080.3.1(b) requires the lead agency to begin consultation with a Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project if the Tribe requests the lead agency, in writing, to be informed by the lead agency through formal notification of projects that are proposed in that geographic area and the tribe subsequently requests consultation.

Pub. Res. Code Section 21084.3 addresses mitigation for tribal cultural resources impacts as follows:

a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

    1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

2) Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

   A. Protecting the cultural character and integrity of the resource.

   B. Protecting the traditional use of the resource.

   C. Protecting the confidentiality of the resource.

3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

4) Protecting the resource.

Public Resources and Health and Safety Codes

Public Resources Code Section 5097.98 and California Health and Safety Code Section 7070.5 and which govern the discovery of human remains, including procedures for Native American human remains, are described in Section 3.5, "Cultural Resources."

3.13.3 Environmental Setting

Section 3.5.3 in Section 3.5, "Cultural Resources," provides information on the natural and cultural history of the Santa Clara Valley region, previous cultural resources surveys and assessments in the Program Renewal Area, and the types of cultural resources that could be encountered in the Program Renewal Area and be considered tribal cultural resources.

No input was received from consulting Native American tribes about the presence of tribal cultural resources within the Program Renewal Area.

As discussed in Section 3.5, "Cultural Resources," based on the location and constituents of other pre-contact indigenous sites in the Santa Clara Valley in similar environmental settings, the Program Renewal Area has a high sensitivity for containing important pre-contact indigenous property types including midden and artifact and/or ecofact scatters; residential sites; non-residential sites; shellmounds; districts and landscapes; cemeteries, or indigenous burial sites; and isolated artifacts and re-deposited materials. These types of resources could all also be considered tribal cultural resources. In addition, tribal cultural districts and landscapes are documented in Santa Clara County, including the Coyote Creek Archaeological District, the Circle of Circles Archaeological District, and the Juristac Tribal Cultural Landscape, all of which have been listed or recommended eligible for listing in the California Register of Historical Resources. Tribal cultural resources can be located along waterways including the Program Renewal Area, as well as in many other locations that provide documented use and significance to Native American tribes.

Tribal Consultation

Valley Water went beyond the minimum AB 52 formal consultation requirements and contacted each tribe on the Native American Heritage Commission (NAHC) list for Santa Clara

County[2] by certified letter on May 11, 2022. Tribes contacted were the Wuksache Indian Tribe, the Ohlone Indian Tribe, the Confederated Villages of Lisjan, Tamien Nation, Rumsen Ama Turataj Ohlone, North Valley Yokuts Tribe, the Muwekma Ohlone Indian Tribe, Indian Canyon Mutsun Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, and the Amah Mutsun Tribal Band. The letters provided information on the Program Renewal and an opportunity to request consultation regarding possible significant effects that the Program Renewal may have on tribal cultural resources. No responses were received.

As of November 2021, Valley Water officially established a tribal liaison function within its Office of Racial Equity, Diversity & Inclusion. Valley Water has conducted the following actions regarding ongoing Tribal outreach efforts agencywide:

- Standing collaboration meetings between the Muwekma Ohlone Tribe, the City of San José, and Valley Water until Spring 2024.
- Partnered with the Association of Ramaytush Ohlone to provide tribal cultural sensitivity training for Valley Water in November 2022.
- Adopted updated Facility Naming/Renaming guidance developed with input from the Association of Ramaytush Ohlone, Tamien Nation, and Amah Mutsun Tribal Band to include consideration for names that honor Bay Area Indigenous Peoples or restore known pre-contact geographic names.
- Partnered with USACE, San Francisco's Tribal Liaison to provide a Tribal Law 101 informational seminar to Valley Water in January 2024.
- Launched in March 2024 a new quarterly Tribal Leaders Speaker series to make space for Tribal leaders to share their history, priorities and opportunities for collaboration with Valley Water with employees. Thus far the series has feature chairpersons from the Amah Mutsun Tribal Band, Indian Canyon Mutsun Band of Costanoan and Tamien Nation.
- Launched in March 2024 Tribal Information Resources intranet page for Valley Water employees.

3.13.4 Impact Analysis

Methodology

No input was received from consulting Native America tribes about the presence of tribal cultural resources within the Program Renewal Area. This analysis considers whether the Program Renewal would cause damaging effects to any potential tribal cultural resources discussed in the environmental setting, including archaeological resources and human remains.

[2] Pub. Res. Code Section 21080.3 requires project notification to Native American tribes that have requested to be informed of projects in that agency's jurisdiction. Valley Water went beyond the minimum AB 52 formal consultation requirements and sent letters to all Native American tribes provided on the NAHC's list of Native American tribes in Santa Clara County, not just those that had previously sent notification requests.

Criteria for Determining Significance

For the purposes of this analysis, the Program Renewal would result in a significant impact on tribal cultural resources if it would:

A. Cause a substantial adverse change in the significance of a tribal cultural resource.

Environmental Impacts

Impact TCR-1: Adverse Change in the Significance of Known and Previously Undiscovered Tribal Cultural Resources (Less than Significant)

Ground-disturbing maintenance activities conducted under the Program Renewal would have the potential to disturb known or previously undiscovered tribal cultural resources within the Program Renewal Area, including those that are archaeological resources and human remains, as well as archaeological districts and tribal cultural landscapes.

Based on the background information and impact analysis provided in Section 3.5, "Cultural Resources," there is the potential for archaeological resources or human remains that may be tribal cultural resources to be uncovered during ground-disturbing activities, and a substantial adverse change in the significance of tribal cultural resources would be significant in the absence of BMPs.

Applicable Best Management Practices

The BMPs summarized below would be implemented to minimize the potential for disturbances to archaeological or historical resources, including tribal cultural resources. Full descriptions of each BMP are provided in Chapter 2, *Project Description*, Table 2-10.

- **BMP GEN-47: Minimize Impacts to Inadvertently Discovered Cultural Resources** will ensure that work occurring in areas where archaeological resources, including resources that could be also considered tribal cultural resources, are identified will be restricted or stopped. Valley Water will engage an archaeologist to determine if the find meets the California or National Register criteria of significance, or to be a unique archeological or tribal cultural resource. If the resource is assessed as significant and cannot be avoided, an Action Plan will be developed, including preparation of a data recovery program as needed.
- **BMP GEN-49: Discovery of Human Remains** will ensure that if human remains are identified, all work will be restricted or stopped until proper protocols are met, including meeting the requirements of Pub. Res. Code Section 5097.98 and Health and Safety Code Section 7050.5. These require work to halt in the vicinity of the find, and the County coroner to inspect the find and determine the cause of death. If the find is determined to be Native American in origin, the coroner is required to notify the Native American Heritage Commission, who assigns a Most Likely Descendant. The Most Likely Descendant makes recommendations for the appropriate treatment of the human remains.
- **BMP GEN-50: Review of Projects with Native Soil** will ensure that an analysis is conducted of project sites that would involve disturbance/excavation of native soil to determine the potential for affecting archaeological resources, including those that

could also be considered tribal cultural resources. If resources would be impacted and could not be avoided, appropriate management actions (e.g., monitoring during construction, presence/absence testing for subsurface resources, data recovery, etc.) would be developed.

Conclusion

By implementing BMPs GEN-47 and GEN-50, known tribal cultural resources would be identified, evaluated, and avoided if significant, and procedures would be followed to minimize impacts on previously unknown tribal cultural resources. By implementing BMP GEN-49, the County coroner would be contacted if human remains that may be tribal cultural resources are identified and, if determined to be Native American, the Native American Heritage Commission would assign a Most Likely Descendant who would make additional recommendations. Because these BMPs would assure that the Program Renewal would not cause substantial adverse changes in the significance of tribal cultural resources, this impact would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

3.14 Water Quality

3.14.1 Introduction

This section describes the regulatory setting, environmental setting, and potential impacts of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal related to water quality. Data sources used to prepare this section include sediment and water quality monitoring reports prepared by Valley Water; the San Francisco Bay Regional Water Quality Control Board (RWQCB) basin plan (San Francisco Bay RWQCB 2023a); the Central Coast RWQCB basin plan (2019); and the California Department of Water Resources' (DWR's) Bulletin 118 groundwater basin descriptions (DWR 2004a, 2004b). Other applicable regulations and background documents were also reviewed.

The Program Renewal activities focus on managing streams and adjacent lands, flood protection channels, and other flood management-related facilities. Several Program Renewal activities are directly related to and influenced by hydrologic and water quality processes.

As described in Chapter 1, *Introduction*, public comments were received during the scoping period (refer to **Appendix B**) and were considered in preparing this Draft Subsequent Environmental Impact Report (DSEIR). Scoping comments applicable to the water quality analysis included concerns regarding direct and indirect impacts to waterbodies from Program Renewal activities, resulting in adverse effects on beneficial uses such as cold freshwater habitat (COLD), warm freshwater habitat (WARM), estuarine habitat (EST), fish migration (MIGR), preservation of rare and endangered species (RARE), and spawning habitat (SPWN). Impacts on in-stream habitat are evaluated in detail in Section 3.4, "Biological Resources," and are also discussed in the "Impact Analysis" section below.

3.14.2 Regulatory Setting

The following subsections discuss federal, state, and regional laws and regulations that pertain to water quality for the Program Renewal. Applicable local plans, policies, regulations, and ordinances related to water quality are included in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C discusses several plans throughout Santa Clara County and local jurisdictions that contain relevant strategies, policies, and goals for improving and maintaining water quality through addressing non-point source pollution, and restoring wetlands, riparian areas, and other habitats.

Federal Plans, Policies, Regulations, and Laws

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections of the CWA that pertain to water quality regulation are Sections 303, 401, and 402 (discussed hereunder). Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the United States and is overseen by the U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE). Section 404 requirements are discussed further in Section 3.4, "Biological Resources."

Section 303

Under CWA Section 303(d), states are required to identify "impaired water bodies" (those that do not meet established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality. Following listing, USEPA then approves the state's recommended list of impaired waters or adds and/or removes water bodies to the list. Each RWQCB must update the Section 303(d) list every 2 years. Water bodies on the list have no further assimilative capacity for the identified pollutant, and the Section 303(d) List identifies priorities for development of pollution control plans for each listed water body and pollutant. Impaired waterbodies in the Program Renewal Area, as identified under CWA Section 303(d), are discussed in more detail below.

The pollution control plans triggered by the CWA Section 303(d) List are called Total Maximum Daily Loads (TMDL). The TMDL is a "pollution budget" designed to restore the health of a polluted body of water. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, thereby ensuring the protection of beneficial uses. A TMDL also contains the target reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed (point sources, non-point sources, and natural sources). The TMDL process quantifies water quality problems, identifies pollutant sources, and recommends pollutant load reductions or control actions needed to restore and protect the beneficial uses of the impaired water body. The calculation of a TMDL includes a margin of safety and considers seasonal variations (40 Code of Federal Regulations [CFR] Section 130.2).

The San Francisco Bay and Central Coast RWQCBs have prepared, or are in the process of preparing, TMDLs applicable to water bodies in Santa Clara County. USEPA has approved the following TMDLs that are currently implemented by the San Francisco Bay RWQCB: Guadalupe River Watershed Mercury, San Francisco Bay Mercury, San Francisco Bay polychlorinated biphenyls (PCBs), and Urban Creeks Pesticide Toxicity. Additionally, the San Francisco Bay RWQCB is currently developing a TMDL for sediment impairment in San Francisquito Creek. USEPA-approved TMDLs within those portions of Santa Clara County under the jurisdiction of the Central Coast RWQCB include several TMDLs for the Pajaro River Watershed[1] (Central Coast RWQCB 2024a):

- Fecal Coliform;
- Sediment;
- Nutrients, and
- Chlorpyrifos and Diazinon.

Additional details regarding these USEPA-approved TMDLs in the Program Renewal Area are provided below in "State Plans, Policies, Regulations, and Laws."

Section 401, Water Quality Certification

The goal of CWA Section 401 is to allow for evaluation of water quality when considering activities associated with dredging or placement of fill materials into waters of the United

[1] The Pajaro River Watershed includes the Pajaro River, San Benito River, Llagas Creek, and Tequisquita Slough.

States. In California, the State Water Resources Control Board (SWRCB) and its nine RWQCBs issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and with its water quality control plan (also known as a basin plan).

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of dredged and fill materials into surface waters of the United States (including wetlands) must obtain a water quality certification (or Section 401 certification) to ensure that any such discharge will comply with the applicable provisions of the CWA, including Sections 301, 302, 303, 306, and 307, and state water quality standards. The water quality certification is issued by the state in which the discharge would originate; or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, compliance with CWA Section 401 is required for all projects that have a federal authorization and may affect state water quality (such as issuance of a CWA Section 404 permit).

Section 402, National Pollutant Discharge Elimination System

CWA Section 402 regulates discharges to surface waters (other than dredge or fill material) through the National Pollutant Discharge Elimination System (NPDES), administered by USEPA. The NPDES program provides for both general permits (those that cover several similar or related activities) and individual permits for discharges to waters of the U.S. In California, the NPDES program is implemented at the state level and is further described below.

State Plans, Policies, Regulations, and Laws

California's Porter-Cologne Water Quality Control Act is the primary state regulation governing water quality. The water quality control plans (or basin plans) and policies established by the Central Coast and San Francisco Bay RWQCBs, which have jurisdiction in the Program Renewal Area, are discussed below. In addition, the SWRCB also has responsibility for implementing CWA Section 402 and has established general NPDES permits for the regulation of discharges from construction, municipal, and herbicide application activities, which are also discussed below. The General NPDES Aquatic Pesticide Use permit is described in Section 3.8, "Hazards and Hazardous Materials."

California Porter-Cologne Water Quality Act

The Porter-Cologne Act was passed in 1969, and together with the CWA, provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The Porter-Cologne Act established regulatory authority over "waters of the state," which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Division 7, Section 13050). The Porter-Cologne Act also assigned responsibility for implementing CWA Sections 303, 401, and 402 to the SWRCB and RWQCBs.

The Porter-Cologne Act requires the development and periodic review of basin plans for the protection of water quality in each of the state's nine regions. A basin plan is unique to each region and must identify beneficial uses, establish water quality objectives for the reasonable

protection of the beneficial uses, and establish a program of implementation for achieving the water quality objectives. To ensure currency, basin plans must be updated every 3 years. Basin plans implement Section 303 of the CWA, which requires states to establish their own water quality standards. Basin plans provide the technical basis for the RWQCBs to determine waste discharge requirements (WDRs), take enforcement actions, and evaluate grant proposals.

Portions of Santa Clara County are included in the San Francisco Bay Basin Plan (2010, amended 2023) and the Central Coast Region Basin Plan (2019). Specifically, the northern portion of the county from San Francisco Bay to roughly the area of Morgan Hill (and also including the Coyote Creek watershed) is under the jurisdiction of the San Francisco Bay RWQCB; while the southern portion of the county from roughly Morgan Hill to the southern boundary at the Pajaro River is under the jurisdiction of the Central Coast RWQCB. The beneficial uses established for each surface water body and groundwater basin in the Program Renewal Area, as established in these basin plans, are provided in **Table 3.14-1**.

Table 3.14-1. Beneficial Uses for Surface Water Bodies and Groundwater Basins in the Program Renewal Area

Water Body	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC1	REC2	NAV
Santa Clara Basin																			
Alamitos Creek			E	E					E			E	E	E	E	E	E	E	
Almaden Reservoir		E		E					E				E	E	E	E	E*	E	
Alviso Slough										E		E	E			E	E	E	
Anderson Reservoir		E		E			E		E					E	E	E	E*	E	
Calabazas Creek	E			E					E						E	E	E	E	
Calero Reservoir		E		E										E	E	E	E*	E	
Coyote Creek				E			E		E			E	E	E	E	E	E	E	
Coyote Reservoir	E	E					E		E					E	E	E	E*	E	
Guadalupe Creek			E	E					E			E	E	E	E	E	E	E	
Guadalupe Reservoir		E		E					E					E	E	E	E	E	
Guadalupe River				E					E			E	E	E	E	E	E	E	
Guadalupe Slough										E			E			E	E	E	
Lexington Reservoir		E		E			E		E					E	E	E	E	E	
Los Gatos Creek		E	E	E					E			P	E	P	E	E	E	P	
Matadero Creek									E			E	E	E	E	E	E	E	
Permanente Creek				E					E				E	E	E	E	E	E	
San Francisquito Creek									E			E	E	E	E	E	E	E	
San Francisco Bay (South)					E		E	E		E		E	E	E		E	E	E	E
Saratoga Creek	E		E	E					E						E	E	E	E	
Smith Creek		E	E						E					E	E	E	E	E	
Stevens Creek			E						E			E	E	E	E	E	E	E	
Stevens Creek Reservoir		E		E			E		E			E		E	E	E	E	E	
Pajaro River Basin																			
Carnadero Creek		E		E			E		E			E	E		E	E	E	E	
Chesbro Reservoir	E	E	E	E			E					E	E	E	E	E	E	E	E
Corralitos Creek	E	E		E	E		E		E			E		E	E	E	E	E	
Llagas Creek (above Chesbro Reservoir)	E	E	E	E			E		E				E		E	E	E	E	

Water Body	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC1	REC2	NAV
Llagas Creek (below Chesbro Reservoir)	E	E		E	E		E		E			E	E	E	E	E	E	E	
Little Llagas Creek	E	E		E			E								E	E	E	E	
Pajaro River	E	E	E	E	E		E		E			E		E	E	E	E	E	
Uvas Creek, downstream of Uvas Reservoir	E	E		E	E		E		E			E	E	E	E	E	E	E	
Uvas Reservoir	E	E	E	E			E						E	E	E	E	E	E	E
Uvas Creek, upstream of Uvas Reservoir		E	E	E			E		E			E	E	E		E	E	E	
Groundwater Basins (Sub-Basin)																			
Santa Clara Valley (Santa Clara)	E	E			E	E													
Gilroy-Hollister Valley (Llagas Area)	E	E			E														

Note: Beneficial uses are defined as: AGR = Agricultural Supply; COLD = Cold Freshwater Habitat; COMM = Ocean, Commercial, and Sport Fishing; EST = Estuarine Habitat; FRSH = Freshwater Replenishment; GWR = Groundwater Recharge; IND = Industrial Service Supply; MAR = Marine Habitat; MIGR= Fish Migration; MUN = Municipal and Domestic Supply; NAV = Navigation; PRO = Industrial Process Supply; RARE = Preservation of Rare and Endangered Species; REC1 = Water Contact Recreation; REC2 = Non-contact Water Recreation; SHELL = Shellfish Harvesting; SPWN = Fish Spawning; WARM = Warm Freshwater Habitat; WILD = Wildlife Habitat; E = existing beneficial use; P = potential beneficial use

** Water quality objectives apply; water contact recreation is prohibited or limited to protect public health.

Note: The basin plans do not include beneficial uses for all water bodies included in the Program Renewal Area, and not all water bodies in the Program Renewal Area are shown in the table. In addition, reservoirs in the Program Renewal Area and San Francisco Bay (South) have been included for clarity although no activities would be performed in these water bodies under the Program Renewal.

Sources: San Francisco Bay RWQCB 2024; Central Coast RWQCB 2019

Municipal Regional Stormwater NPDES Permit

The Municipal Regional Stormwater NPDES permit (Order R2-2022-0018, NPDES Permit No. CAS612008) covers municipal stormwater discharges from the majority of Bay Area counties and cities (SWRCB 2022a). The permit is applicable to Santa Clara County and the following cities and agencies within the county which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP): the cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale; the towns of Los Altos Hills and Los Gatos; and Valley Water.

Multiple provisions in the permit address the urban runoff requirements of existing TMDLs, such as the San Francisco Bay Mercury and PCBs TMDLs. The Municipal Regional Stormwater NPDES permit establishes discharge prohibitions, annual reporting requirements, construction site controls, water quality monitoring, pesticides toxicity control, and trash load reductions. The purposes of these measures are to: control and reduce the levels of pollution in both stormwater and non-stormwater discharges to storm drains and watercourses; gather concentration and loading information for a number of pollutants of concern for which TMDLs are planned or are in the early stages of development; and ensure the implementation of appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects (San Francisco Bay RWQCB 2022a).

The SCVURPPP incorporates regulatory, monitoring, and outreach measures aimed at reducing pollution in urban runoff to the "maximum extent practicable" to improve the water quality of South San Francisco Bay and the streams of Santa Clara Valley (SCVURPPP 2021). An Urban Runoff Management Plan (URMP), prepared by the SCVURPPP, includes both an area-wide plan and individual plans that detail the actions the fifteen co-permittees will take, collectively and individually, to reduce urban runoff pollution. This includes various stormwater control strategies, such as green stormwater infrastructure, trash control measures, controls for legacy pollutants (PCBs and mercury), urban pesticide controls, public outreach and education, inspections of industrial/commercial sites and construction sites, and water quality monitoring (SCVURPPP 2021). In addition, the URMP describes the goals, objectives, and elements of the plan so that agencies may implement them in accordance with the Municipal Regional Stormwater NPDES permit (SCVURPPP 2021). The Program Renewal would continue to comply with applicable requirements detailed in the URMP, including water quality monitoring, construction site controls, and pesticide toxicity control.

Total Maximum Daily Loads

As described above, TMDLs are actions to restore clean water. TMDLs examine the water quality problems identified in the CWA Section 303(d) list, identify sources of pollutants, and specify actions that create solutions. TMDLs account for all the sources of a pollutant, including discharges from wastewater treatment facilities; runoff from homes, agriculture, and streets or highways; "toxic hot spots;" and deposits from the air. In addition to accounting for past and current activities, TMDLs may also consider projected growth that could increase pollutant levels. TMDLs are adopted by the RWQCB as amendments to the region's Basin Plan or separately by resolution. TMDLs prescribe numeric targets and load allocations to achieve water quality goals, and they include implementation actions and monitoring requirements. The specific TMDLs described below are potentially applicable to the Program Renewal.

Guadalupe River Mercury TMDL

On June 1, 2010, USEPA approved a basin plan amendment to incorporate into the San Francisco Bay Basin Plan, the Guadalupe River Mercury TMDL, and the implementation plan for mercury. The basin plan amendment for mercury also establishes new water quality objectives for mercury. As described in the Basin Plan (San Francisco Bay RWQCB 2024), current sources of mercury in the Guadalupe River watershed include: (1) mercury mining waste; (2) reservoirs, lakes, and shallow impoundments, where mercury is converted to methylmercury (MeHg); (3) urban stormwater runoff; (4) nonurban stormwater runoff, and (5) atmospheric deposition. The numeric TMDL targets are fish-tissue water quality objectives (0.05 milligrams [mg] MeHg per kg fish for smaller fish, and 0.1 mg MeHg per kg fish for larger fish), which are designed to protect aquatic organisms and wildlife. Load allocations are also concentration-based: 0.2 mg mercury per kg suspended sediment in creeks and rivers (i.e., Guadalupe Creek, Alamitos Creek, and Guadalupe River); and 1.5 nanograms (ng) total MeHg per liter water in reservoirs and lakes (i.e., Guadalupe Reservoir, Almaden Reservoir, Calero Reservoir, and Lake Almaden) (San Francisco Bay RWQCB 2024). The Implementation Plan identifies a variety of mercury source control actions, including erosion minimization for riparian habitat restoration and creek bank stability projects, and collaborative watershed monitoring and control of urban stormwater runoff. The Implementation Plan also identifies actions for reservoirs and lakes, including technical studies of MeHg production and control – as well as actions for cleanup of mercury mines (San Francisco RWQCB 2024).

The Program Renewal activities, particularly sediment removal and disposal, generally would support the MeHg control activities. (San Francisco Bay RWQCB 2023b, 2024).

San Francisco Bay Mercury TMDL

A TMDL for mercury in San Francisco Bay and an implementation plan to achieve the TMDL were incorporated as an amendment into the San Francisco Bay Basin Plan on February 12, 2008, by USEPA. The purpose of the San Francisco Bay Mercury TMDL and implementation plan is to examine the mercury water quality situation in the Bay and identify sources of mercury. As described in the Basin Plan (San Francisco Bay RWQCB 2024), San Francisco Bay is impaired because mercury contamination is adversely beneficial uses, including sport fishing, preservation of rare and endangered species, and wildlife habitat. Mercury concentrations in San Francisco Bay fish are high enough to threaten the health of humans who consume them, while mercury concentrations in some bird eggs is high enough to account for abnormally high rates of eggs failing to hatch. The TMDL numeric target for suspended sediment is 0.2 mg mercury (Hg) per kg dry sediment, whereas the wildlife target is a fish tissue mercury concentration of 0.03 mg Hg per kg fish. The total sum of Hg load and wasteload allocations for San Francisco Bay is 700 kg/year (San Francisco Bay RWQCB 2024).

A mercury load allocation has been assigned to the SCVURPPP and its related urban stormwater discharges, which is equal to 23 kg/year (San Francisco Bay RWQCB 2024). Program Renewal activities, such as sediment removal and disposal, would help to remove mercury from channels that could flow into the San Francisco Bay.

San Francisco Bay PCB TMDL

USEPA approved a TMDL and an implementation plan for PCBs in San Francisco Bay, incorporated as a basin plan amendment in 2010. The TMDL is intended to achieve protection

of the commercial and sport fishing beneficial use and other potentially affected beneficial uses, such as preservation of rare and endangered species, estuarine habitat, and wildlife habitat (San Francisco Bay RWQCB 2024). Sources of PCBs to fish and the water column of San Francisco Bay generally fall into two categories: (1) external sources including atmospheric deposition, Central Valley inflow, municipal and industrial wastewater discharges, and urban and non-urban stormwater runoff; and (2) internal sources, including movement or release of PCBs already in San Francisco Bay sediments (e.g., dredging and in-Bay disposal of dredged sediment, erosion of bay bottom sediment containing PCBs [bed erosion], and in-Bay contaminated sites). The numeric TMDL target to protect both human health and wildlife is an average fish tissue concentration of 10 micrograms total PCBs per kilogram of typically consumed fish. The total load allocation for PCBs in San Francisco Bay is 10 kg/year, of which 0.5 kg/year is assigned to stormwater runoff from within Santa Clara County (San Francisco Bay RWQCB 2024).

The San Francisco Bay PCBs TMDL is implemented through permit requirements (Municipal Regional Permit, Watershed Permit) and through guidelines for cleanup, remediation, and spill sites, among other actions (San Francisco Bay RWQCB 2024). The Program Renewal would be in compliance with the TMDL because it would not contribute any new sources of PCBs to San Francisco Bay and could remove PCBs sequestered in the stream sediment during sediment removal activities.

Urban Creeks Pesticide TMDL

Stormwater runoff, particularly the common insecticide diazinon, has impaired the water quality of San Francisco Bay area urban creeks such that the creeks exceed water quality standards for aquatic toxicity. Only a small fraction of the diazinon applied reaches surface waters, but that fraction is sufficient to result in diazinon concentrations that are toxic to pest organisms. Thus, an amendment incorporating a TMDL and implementation plan for Diazinon and pesticide-related toxicity in the Bay Area's urban creeks have been incorporated into the San Francisco Bay Basin Plan (San Francisco Bay RWQCB 2024). Numeric targets are as follows: pesticide-related acute and chronic toxicity in urban creek water and sediment shall not exceed 1.0 acute toxic units (TUa) or 1.0 chronic toxic units (TUc). For diazinon specifically, the Basin Plan states that diazinon concentrations in urban creeks shall not exceed 100 nanograms per liter (ng/L) as a one-hour average (San Francisco Bay RWQCB 2024). Load allocations are the same as the numeric TMDL targets.

The TMDL is implemented through regulatory programs (e.g., Municipal Regional Permit), outreach (e.g., regarding Integrated Pest Management), and research (San Francisco Bay RWQCB 2023c). The Program Renewal would not use pesticides, such as diazinon, that are covered by the Urban Creeks Pesticide TMDL and, therefore, would not be subject to the TMDL. However, to the extent Program Renewal activities could remove or reduce sources of pesticides (e.g., contaminated sediments/soils) within creeks, this could further the goals of the TMDL.

Pajaro River Fecal Coliform TMDL

On August 3, 2010, USEPA approved the incorporation of a Pajaro River Fecal Coliform TMDL and its implementation plan as an amendment to the Central Coast Region Basin Plan (Central Coast RWQCB 2019). The fecal coliform TMDL applies to the Pajaro River watershed, including the Pajaro River, San Benito River, Llagas Creek, Tequisquita Slough, San Juan Creek, Carnadero/Uvas Creek, Bird Creek, Pescadero Creek, Tres Pinos Creek, Furlong (Jones)

Creek, Santa Ana Creek, and Pacheco Creek. The purpose of this TMDL is to protect water contact recreation in the watershed, which the current levels of fecal coliform do not support (Central Coast RWQCB 2019). The relative order of controllable sources contributing fecal coliform in the Pajaro River Watershed, in decreasing order of contribution are: (1) storm drain discharges to municipally owned and operated storm sewer systems required to be covered by an NPDES permit (MS4s); (2) domestic animal discharges that do not discharge to MS4s; (3) spills and leaks from Sanitary Sewer Collection and Treatment Systems; and (4) private sewer laterals connected to municipal sanitary sewer collection systems (Central Coast RWQCB 2019). Natural, uncontrollable sources also contribute fecal coliform in the Pajaro River Watershed.

The numeric TMDL target is as follows: fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200 most probable number (MPN) per 100 mL, nor shall more than 10 percent of samples collected during any 30-day period exceed 400 MPN per 100 mL (Central Coast RWQCB 2019). The load allocation for Santa Clara County and other parties under the Municipal Regional Permit is equal to the number target. Implementation actions include development and implementation of Stormwater Management Programs to control urban runoff from MS4s, maintenance of private sewer laterals to prevent spills, and controlling discharges of pollutants from lands containing domestic animals (Central Coast RWQCB 2019).

The Program Renewal would be in compliance with this TMDL because the Program Renewal would not introduce new sources of fecal coliform to the Pajaro River and could remove existing sources of fecal coliform during sediment removal.

Pajaro River Sediment TMDL

The Pajaro River watershed has experienced acute erosion and sedimentation problems as a result of urban and agricultural encroachment on streams, the poor condition of drainage infrastructure (i.e., ditches, culverts, and roads), streambank instability caused by the removal and/or loss of riparian vegetation. The sediment problems were affecting the watershed's ability to support the fisheries-related beneficial uses of its water bodies, including cold, freshwater habitat, migration, and spawning. Therefore, a Pajaro River Sediment TMDL and implementation plan, applicable to the Pajaro River, Llagas Creek, Rider Creek, and San Benito River, were incorporated by USEPA as an amendment to the Central Coast Region Basin Plan in May 2007 (Central Coast RWQCB 2019).

The TMDL identifies two types of numeric targets: suspended sediment concentration-duration and streambed characteristics. These are provided in the Basin Plan, with targets corresponding to specific subwatersheds that generally decrease with increasing duration (Central Coast RWQCB 2019). For the Upper Pajaro River, the numeric target is up to 1,808 milligrams per liter (mg/L) suspended sediment for a one-day duration. Load allocations are similarly assigned based on subwatersheds for different source categories, as shown in the Basin Plan. Generally, urban lands constitute a smaller proportion of the total load allocation (e.g., relative to other source categories, such as forest and pasture and range) – and discharges from urban lands are addressed through implementation of Stormwater Management Programs pursuant to NPDES MS4 permits (Central Coast RWQCB 2019).

The Program Renewal would not contribute additional sources of sediment over the long-term (see discussion of potential short-term erosion and sedimentation associated with

Program Renewal activities under Impact WQ-1 in Section 3.14.4, "Impact Analysis") and would be beneficial to the implementation of this TMDL through sediment removal and bank stabilization.

Pajaro River Nutrients TMDL

The Pajaro River Nitrate TMDL was superseded by the "TMDLs for Nitrogen Compounds and Orthophosphate in Streams of the Pajaro River Basin" (Pajaro River Nutrients TMDL), which was adopted by Resolution No. R3-2015-0004 on July 30, 2015, by the Central Coast RWQCB, and subsequently approved by the USEPA in October 2016 and incorporated into the Basin Plan (Central Coast RWQCB 2019). The TMDL addresses surface water quality impairments in the Pajaro River Basin which are caused by exceedances of water quality criteria for nitrate, unionized ammonia, and associated nutrient-related problems such as excessive orthophosphate, DO imbalances, toxicity, and excess algal biomass. The municipal and domestic drinking water supply (MUN, GWR) beneficial uses are not being protected, along with the following aquatic habitat beneficial uses: wildlife habitat (WILD), cold fresh water habitat (COLD), warm fresh water habitat (WARM), migration of aquatic organisms (MIGR), spawning, reproduction, and/or early development (SPWN), preservation of biological habitats of special significance (BIOL), and rare, threatened, or endangered species (RARE) (Central Coast RWQCB 2019). In addition, the current or potential future agricultural water supply (AGR) beneficial uses are not being supported. Specific sources of nutrient discharges include irrigated agriculture, municipal NPDES-permitted stormwater system discharges, industrial and construction NPDES-permitted stormwater sources, livestock waste associated with grazing lands and rural residential areas, golf courses, and natural sources. The Basin Plan notes that municipal NPDES-permitted stormwater sources are a relatively minor source of nitrogen compounds and orthophosphate, but they can be locally significant (Central Coast RWQCB 2019).

Numeric targets are identified for the different substances addressed by the TMDL (Central Coast RWQCB 2019). For impaired stream reaches that are required to support drinking water (MUN) and groundwater recharge (GWR) beneficial uses, the nitrate numeric target is 10 mg/L (nitrate as N). For un-ionized ammonia (a nitrogen compound), the numeric target is 0.025 mg/L (as N). For biostimulatory substances (i.e., nitrate and orthophosphate), numeric targets are identified for specific stream reaches that vary based on the season/time of year, as shown in the Basin Plan (Central Coast RWQCB 2019). Finally, numeric targets are provided for nutrient-response indicators (DO and chlorophyll and microcystins) based on the water body beneficial use designation (Central Coast RWQCB 2019). Waste load allocations are concentration-based and are equivalent to the numeric targets.

The implementation plan for achieving the TMDL numeric targets/load allocations calls for implementation of the Conditional Waiver of Waste Discharge Requirements for Irrigated Lands ("Agricultural Order"). General Permit for Stormwater Discharges from Small MS4s, NPDES general permits for industrial and construction stormwater discharges, and other approaches to reduce discharges from municipal wastewater treatment facilities, domestic animal and livestock-related land uses, and public and private golf courses (Central Coast RWQCB 2019). The Program Renewal would have no effect on the Pajaro River Nitrate TMDL because it would not introduce any new nitrate sources.

Pajaro River Chlorpyrifos and Diazinon TMDL

The Pajaro River, Pajaro River Estuary, and Llagas Creek are impaired due to exceedances of the water quality objective for pesticides and toxicity (Central Coast RWQCB 2024c). Specifically, the Pajaro River Estuary is impaired due to diazinon, while the Pajaro River is impaired due to chlorpyrifos and diazinon, and Llagas Creek is impaired due to chlorpyrifos. The aquatic habitat beneficial uses are not being protected in these waterbodies because of these impairments. As such, in 2013, USEPA approved the Pajaro River Chlorpyrifos and Diazinon TMDL, which aims to identify sources of impairments, determine allocations, and identify implementation actions to achieve water quality objectives and protect beneficial uses (Central Coast RWQCB 2024c). The TMDL was adopted through the Central Coast RWQCB's adoption of a resolution, including the findings that the Agricultural Order would implement the TMDL, and thus was not a Basin Plan amendment (Central Coast RWQCB 2013).

The TMDL numeric targets are numeric interpretations of the narrative water quality objectives for pesticides contained within the Basin Plan. This translates to acute and chronic water column numeric targets for chlorpyrifos (from 0.025 parts per billion [ppb] Criterion Maximum Concentration [CMC] to 0.015 ppb Criterion Continuous Concentration [CCC]) and diazinon (from 0.16 ppb CMC to 0.10 ppb CCC) (Central Coast RWQCB 2013). The load allocation for chlorpyrifos and diazinon in the Pajaro River Watershed is concentration-based and equal to the numeric targets. As noted above, discharges from irrigated agriculture are the sole controllable source causing impairment due to chlorpyrifos and diazinon in the Pajaro River Watershed. Thus, the TMDL would be achieved through implementation of the Agricultural Order. The Program Renewal would not use chlorpyrifos and diazinon, nor would it involve irrigated agriculture, and, therefore, would not be subject to the TMDL. Nevertheless, to the extent Program Renewal activities could remove or reduce potential sources of chlorpyrifos and diazinon within streams (e.g., contaminated sediment), this would further the goals of the TMDL.

Regional Plans, Policies, Regulations, and Ordinances

As described above, the 15 Santa Clara County co-permittees of the Municipal Regional Stormwater NPDES permit have developed an URMP. The URMP is a San Francisco Bay area-wide permit that lists 77 co-permittees. In addition, the southern portion of Santa Clara County's jurisdiction and the cities of Gilroy and Morgan Hill have obtained their own Phase II NPDES permit coverage for municipal stormwater activities. Implementation of the Phase II permit is guided by a Stormwater Management Plan, which describes pollution prevention activities for the communities to enforce. As the Program Renewal would not entail new urban development or redevelopment (and would not generate non-point source pollutant discharges), it would generally not conflict with requirements in these NPDES permits. Rather, by removing trash and debris and maintaining storm drainage capacity, the Program Renewal would help implement the permits. As noted above, the Program Renewal would continue to comply with applicable requirements detailed in the URMP, including water quality monitoring, construction site controls, and pesticide toxicity control.

3.14.3 Environmental Setting

An overview of water quality constituents; and water quality and groundwater resources in the Program Renewal Area is presented in the sections below. Descriptions of watersheds and streams in the Program Renewal Area are provided in Section 3.9, "Hydrology and Geomorphology." A discussion of climate in the Program Renewal Area also is provided in Section 3.9.

Water Quality Constituents

Dissolved Oxygen

Dissolved oxygen (DO) is a measure of the amount of oxygen dissolved in water. DO is an important water quality parameter for aquatic invertebrates and fish, which depend on such oxygen to survive. DO levels depend on various factors, such as temperature, aeration factors (i.e., inflow, wind, waves), salinity, and the relative amount of oxygen generation (caused by photosynthesis by plants) and oxygen use (caused by respiration by animals and biodegradation of organic matter) that takes place in the water. Low DO levels also can occur during low flow conditions because water temperatures are higher and because of the absence of aeration caused by mixing during higher flows. Hypersaturated conditions (DO that is well above 100 percent saturation) can be indicative of excessive plant and algal growth and eutrophic conditions. Large daily fluctuations in DO also can be an indicator of eutrophication because DO levels can drop to toxic levels at night as aquatic plants respire.

Mercury

Mercury (Hg) is a toxic constituent that bioaccumulates in the food chain of aquatic organisms and terrestrial wildlife and is ultimately a human health concern primarily through the consumption of Hg-contaminated fish. MeHg is a more bioavailable form of Hg that is produced from inorganic Hg by specific types of bacteria in the sediments of rivers and reservoirs. The major pathway for human exposure to MeHg is consumption of Hg-contaminated fish. Dietary MeHg is almost completely absorbed into the blood and is distributed to all tissues including the brain. In pregnant women, it also readily passes through the placenta to the fetus and fetal brain. MeHg is a highly toxic substance with several adverse health effects associated with its exposure in humans and animals. High-dose human exposure results in mental retardation, cerebral palsy, deafness, blindness, dysarthria (a motor speech disorder) in utero, and in sensory and motor impairment in adults.

Nutrients

Nutrients, specifically nitrogen and phosphorus, are essential for life, and have a primary role in ecosystem functions. Nitrogen and phosphorus are naturally occurring inorganic ions present within the atmosphere and in fixed forms within organic matter, such as plants and soils. In addition to naturally present concentrations, nutrients are introduced to water bodies through human or animal waste disposal or agricultural application of fertilizers.

Nutrients are commonly the limiting factor for growth in aquatic systems. Nutrient concentrations change seasonally, as aquatic plants respond to changes in the amount and duration of sunlight and either sequester or release nutrients as they grow or decompose. Agricultural fertilizers, domestic and native animal waste (e.g., manure), and human waste (e.g., leaky septic systems, encampment generated bio-waste) can lead to elevated nutrients

above background levels and stimulate plant growth. Rainfall, stream flow, and air and water temperature all influence nutrient concentrations in the watershed.

Pathogens

Pathogens are microorganisms that cause diseases in other organisms. Bacteria are the primary indicator organisms of pathogens, particularly for the detection of waterborne diseases. Waterborne diseases threaten the health of recreational users of waters and wildlife. Pathogenic bacteria contained within fecal waste are the most common source of waterborne diseases. Fecal contamination can be detected by bacterial indicators, such as total coliforms, fecal coliforms, *Escherichia coli* (*E. coli*), and fecal *enterococci*. High concentrations of these indicator bacteria—resulting from poor waste management and disposal, agricultural activities (i.e., grazing), and sometimes from encampments of unsheltered individuals residing along the creek banks—can degrade water quality for human consumption, recreation, and wildlife use.

Pesticides

Pesticides are chemicals designed to control, destroy, repel, or attract a target pest and are purposely introduced into the environment to manage insects, bacteria, weeds, rodents, or other pests. Pesticides may enter surface waters through direct application (i.e., aquatic pesticides) or through surface runoff. Farmers use pesticides to control the pests that can destroy or damage food and other crops. Aquatic pesticides typically are used to combat insects and other organisms known to carry disease (like West Nile virus) or for aquatic vegetation management.

Salinity

Salinity typically is measured by the concentration of anions (salts) dissolved in water and is determined by measuring total dissolved solids in water and the electrical conductivity of water. Changes in salinity levels can adversely affect beneficial uses, such as agricultural water supply, fish migration, and estuarine habitat.

Sediment

The concentration of suspended sediment in the water column is influenced by stream inflows, bank erosion, and the re-suspension of sediments by wind or tidal mixing. Water quality contaminants, such as metals or toxic chemicals, sequestered in bottom sediments or adjacent upland areas can adsorb (attach) to suspended sediments in the water column. Where contaminants can be adsorbed to suspended sediments, higher concentrations of suspended sediments can lead to higher concentrations of contaminants in the water. Because suspended sediments are highly mobile, they provide a transport mechanism that can cause the spreading and deposition of water quality contaminants.

Temperature

Temperature affects aquatic organisms and their biological processes. Extreme water temperatures can have deleterious effects on organism life history and reproduction, especially for sensitive species such as salmonids. Parameters that influence stream temperature include ambient air temperature, humidity, riparian vegetation, topography, surrounding land uses, and the amount of flow. Additionally, inflows from cold water seeps and from groundwater can moderate stream water temperatures. Water temperature

influences several chemical processes within water bodies. DO capacity is inversely related to water temperature.

Surface Water Quality

Ambient water quality in the Santa Clara and Pajaro River basins is influenced by numerous natural and artificial sources, including soil erosion, stormwater runoff, agriculture, recreation activities, municipal point sources, mining, and agriculture. Land uses within the Santa Clara Basin range from residential, commercial, and industrial uses in the northern portion of the basin to a primarily rural southern portion, with cattle ranching, water-supply catchments, and scattered low-density residential development uses (Santa Clara Basin Watershed Management Initiative [SCBWMI] 2003). Historically, agriculture was the dominant land use in the Pajaro River Basin and a major source of nutrient and sediment loading into the Pajaro River. However, substantial portions of the upper Pajaro River Basin have been developed into residential subdivisions. In addition to the residential and agricultural uses, historic mercury mining activities occurred near the Hernandez Lake area and gravel mining occurred along the Pajaro River (SWRCB 2008).

According to the 2020-2022 California Integrated Report (SWRCB 2022b), numerous water bodies in the Santa Clara Basin and Pajaro River Basin have water quality impairments (see **Table 3.14-2**). The most common impairments in the Santa Clara Basin are mercury and diazinon. Both of these impairments are currently being addressed by adopted TMDLs for the San Francisco Bay and for urban creeks in the Bay Area. In the Pajaro River Basin, the primary impairments are nutrients, fecal coliform, and sediments, which also are currently being addressed by adopted TMDLs.

Table 3.14-2. 303(d) List of Impaired Water Bodies and their Impairments in the Program Renewal Area

Water Body					
Santa Clara Basin					
South San Francisco Bay	1. 5A 2. 5A 3. 5A 4. 5A 5. 5A 6. 5A 7. 5B 8. 5B 9. 5B 10. 5A	9,204[2]	1. Chlordane 2. DDT (Dichlorodiphenyl-trichloroethane) 3. Dieldrin 4. Dioxin Compounds 5. Furan Compounds 6. Invasive Species 7. Mercury 8. PCBs 9. PCBs (dioxin-like) 10. Selenium	1. Pesticides 2. Pesticides 3. Pesticides 4. Toxic Organics 5. Toxic Organics 6. Other cause 7. Metals 8. Toxic Organics 9. Toxic Organics 10. Metals	1. A Source Unknown 2. A Source Unknown 3. A Source Unknown 4. A Source Unknown 5. A Source Unknown 6. A Source Unknown 7. A Source Unknown 8. A Source Unknown 9. A Source Unknown 10. A Source Unknown
Lower Peninsula Watershed					
Matadero Creek	1. 5B 2. 5C	7.4	1. Diazinon 2. Trash	1. Pesticides 2. Trash	1. Urban Runoff, Storm Sewers 2. A Source Unknown
Permanente Creek	1. 5B 2. 5A 3. 5A 4. 5C	14	1. Diazinon 2. Selenium 3. Toxicity 4. Trash	1. Pesticides 2. Metals 3. Total Toxics 4. Trash	1. Urban Runoff, Storm Sewers 2. A Source Unknown 3. A Source Unknown 4. A Source Unknown
San Francisquito Creek	1. 5B 2. 5A 3. 5C	12.3	1. Diazinon 2. Sedimentation/Siltation 3. Trash	1. Pesticides 2. Sediment 3. Trash	1. A Source Unknown 2. A Source Unknown 3. A Source Unknown
Stevens Creek	1. 5B 2. 5A 3. 5A 4. 5C	20.9	1. Diazinon 2. Temperature, Water 3. Toxicity 4. Trash	1. Pesticides 2. Other Cause 3. Total Toxics 4. Trash	1. A Source Unknown 2. A Source Unknown 3. A Source Unknown 4. A Source Unknown
Stevens Creek Reservoir	1. 5A 2. 5A 3. 5A 4. 5A	82.8[2]	1. Chlordane 2. Dieldrin 3. Mercury 4. PCBs	1. Pesticides 2. Pesticides 3. Metals 4. Toxic Organics	1. A Source Unknown 2. A Source Unknown 3. A Source Unknown 4. A Source Unknown

Water Body	TMDL Requirement Status[1]	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
Coyote Watershed					
Coyote Creek (Santa Clara County)	1. 5B 2. 5A 3. 5C	1. 58.1	1. Diazinon 2. Toxicity 3. Trash	1. Pesticides 2. Total Toxics 3. Trash	1. A Source Unknown 2. A Source Unknown 3. A Source Unknown
Ogier Quarry Ponds	1. 5A	1. 80.92	1. Mercury	1. Metals	1. A Source Unknown
Anderson Reservoir	1. 5A 2. 5A	1. 1021.82	1. Mercury 2. PCBs	1. Metals 2. Toxic Organics	1. A Source Unknown 2. A Source Unknown
Coyote Reservoir	1. 5A	1. 5702	1. Mercury	1. Metals	1. A Source Unknown
West Valley Watershed					
Calabazas Creek	1. 5B	1. 15.2	1. Diazinon	1. Pesticides	1. A Source Unknown
Saratoga Creek	1. 5B 2. 5C	1. 19	1. Diazinon 2. Trash	1. Pesticides 2. Trash	1. A Source Unknown 2. A Source Unknown
Guadalupe Watershed					
Alamitos Creek	1. 5B	1. 16.3	1. Mercury	1. Metals	1. A Source Unknown
Almaden Lake	1. 5B	1. 28.62	1. Mercury	1. Metals	1. Atmospheric Deposition; Mine Tailings
Almaden Reservoir	1. 5B	1. 53.52	1. Mercury	1. Metals	1. A Source Unknown
Calero Reservoir	1. 5B	1. 190.82	1. Mercury	1. Metals	1. A Source Unknown
Guadalupe Creek	1. 5B	1. 12.8	1. Mercury	1. Metals	1. A Source Unknown
Guadalupe River	1. 5B 2. 5B 3. 5C	1. 15.3	1. Diazinon 2. Mercury 3. Trash	1. Pesticides 2. Metals 3. Trash	1. A Source Unknown 2. A Source Unknown 3. A Source Unknown
Guadalupe Reservoir	1. 5B	1. 60.82	1. Mercury	1. Metals	1. A Source Unknown
Los Gatos Creek (R2)	1. 5B	1. 19.2	1. Diazinon	1. Pesticides	1. A Source Unknown

Water Body	TMDL Requirement Status[1]	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
Los Gatos Creek, Lower	1. 5B 2. 5A	1. 11.8	1. Diazinon 2. Temperature, Water	1. Pesticides 2. Other Cause	1. None Listed 2. A Source Unknown
Lexington Reservoir	1. 5A	1. 349.8[2]	1. Mercury	1. Metals	1. A Source Unknown
Pajaro River Basin					
Corralitos Creek	1. 5A 2. 5A	1. 13.6	1. pH 2. Turbidity	1. Other Cause 2. Sediment	1. No Source Analysis Available 2. No Source Analysis Available
Llagas Creek (Above Chesbro Reservoir)	1. 5A 2. 5A	1. 9.4	1. pH 2. Temperature, Water	1. Other Cause 2. Other Cause	1. No Source Analysis Provided 2. No Source Analysis Provided
Llagas Creek (Below Chesbro Reservoir)	1. 5A 2. 5A 3. 5B 4. 5A 5. 5A 6. 5A 7. 5B 8. 5B 9. 5B 10. 5A 11. 5A 12. 5A 13. 5A 14. 5B 15. 5A	1. 19.2	1. Benthic Community Effects 2. Chloride 3. Chlorpyrifos 4. Copper 5. *Escherichia coli* (*E. coli*) 6. Manganese 7. Nitrate 8. Oxygen, Dissolved 9. Sedimentation/Siltation 10. Selenium 11. Sodium 12. Specific Conductivity 13. Total Dissolved Solids 14. Toxicity 15. Turbidity	1. Other Cause 2. Salinity/Total Dissolved Solids/Chlorides/Sulfates 3. Pesticides 4. Metals 5. Pathogens 6. Metals 7. Nutrients 8. Nutrients 9. Sediment 10. Metals 11. Salinity/Total Dissolved Solids/Chlorides/Sulfates 12. Salinity/Total Dissolved Solids/Chlorides/Sulfates 13. Salinity/Total Dissolved Solids/Chlorides/Sulfates 14. Total Toxics 15. Sediment	1. No Source Analysis Available 2. A Source Unknown 3. Agriculture 4. No Source Analysis Available 5. Collection System Failure; Domestic Animals/Livestock; Urban Runoff/Storm Sewers 6. No Source Analysis Available 7. Agriculture; Domestic Animals/Livestock; Natural Sources; Urban Runoff/Storm Sewers 8. Agriculture; Domestic Animals/Livestock; Natural Sources; Urban Runoff/Storm Sewers 9. Agriculture-grazing; Habitat Modification; Hydromodification; Irrigated Crop Production; Land Development; Resource Extraction; Silviculture

Water Body	TMDL Requirement Status[1]	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
					10. No Source Analysis Available 11. A Source Unknown; Nonpoint Source 12. No Source Analysis Available 13. A Source Unknown 14. Agriculture 15. No Source Analysis Available
Chesbro Reservoir	1. 5A 2. 5A	1. 235.2[2]	1. DDT 2. Mercury	1. Pesticides 2. Metals	1. No Source Analysis Available 2. No Source Analysis Available
Uvas Creek (Above Uvas Reservoir)	1. 5A 2. 5A	1. 8.2	1. pH 2. Temperature, Water	1. Other Cause 2. Other Cause	1. No Source Analysis Available 2. No Source Analysis Available
Uvas Creek (Below Uvas Reservoir)	1. 5B 2. 5A	1. 14.1	1. Oxygen, Dissolved 2. Turbidity	1. Nutrients 2. Sediment	1. Agriculture; Domestic Animals/Livestock; Natural Sources; Urban Runoff/Storm Sewers 2. No Source Analysis Available
Uvas Reservoir	1. 5A	1. 271.9[2]	1. Mercury	1. Metals	1. No Source Analysis Available
Pajaro River	1. 5A 2. 5A 3. 5A 4. 5A 5. 5B 6. 5A 7. 5A 8. 5A 9. 5A 10. 5A 11. 5A 12. 5A 13. 5A 14. 5A	1. 29.5	1. Benthic Community Effects 2. Boron 3. Chlordane 4. Chloride 5. Chlorpyrifos 6. Chromium 7. DDD (Dichlorodiphenyl-dichloroethane) 8. DDE (Dichlorodiphenyl-dichloroethylene) 9. DDT (Dichlorodiphenyl-trichloroethane) 10. Dieldrin	1. Other Cause 2. Metals 3. Pesticides 4. Salinity/Total Dissolved Solids/Chlorides/Sulfates 5. Pesticides 6. Metals 7. Pesticides 8. Pesticides 9. Pesticides 10. Pesticides 11. Pathogens 12. Pesticides 13. Metals	1. No Source Analysis Available 2. A Source Unknown 3. No Source Analysis Available 4. A Source Unknown 5. Agriculture 6. No Source Analysis Available 7. No Source Analysis Available 8. No Source Analysis Available 9. No Source Analysis Available 10. No Source Analysis Available 11. No Source Analysis Available 12. No Source Analysis Available 13. No Source Analysis Available 14. No Source Analysis Available

Water Body	TMDL Requirement Status[1]	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
	15. 5B 16. 5A 17. 5B 18. 5A 19. 5A 20. 5B 21. 5A 22. 5A 23. 5B 24. 5A		11. *Escherichia coli* (*E. coli*) 12. Imidacloprid 13. Manganese 14. Nickel 15. Nitrate 16. Oxyfluorfen 17. Oxygen, Dissolved 18. PCBs (Polychlorinated biphenyls) 19. pH 20. Sedimentation/Siltation 21. Selenium 22. Sodium 23. Toxicity 24. Turbidity	14. Metals 15. Nutrients 16. Pesticides 17. Nutrients 18. Toxic Organics 19. Other Cause 20. Sediment 21. Metals 22. Salinity/Total Dissolved Solids/Chlorides/ Sulfates 23. Total Toxics 24. Sediment	15. Agriculture; Domestic Animals/Livestock; Natural Sources 16. No Source Analysis Available 17. Agriculture; Domestic Animals/Livestock; Natural Sources 18. No Source Analysis Available 19. No Source Analysis Available 20. Agriculture; Domestic Animals/Livestock; Grazing-Related Sources; Habitat Modification; Highway/Road/Bridge Construction; Hydromodification; Land Development; Logging Road Construction/Maintenance; Urban Runoff/Storm Sewers 21. No Source Analysis Available 22. A Source Unknown 23. Agriculture 24. No Source Analysis Available

Notes: TMDL = Total Maximum Daily Load; DDT = Dichlorodiphenyltrichloroethane; PCBs = Polychlorinated biphenyls; DDD = Dichlorodiphenyldichloroethane; DDE = Dichlorodiphenyldichloroethylene; *E. coli = Escherichia coli*

[1] TMDL requirement status abbreviations: 5A = a TMDL is still required; 5B = Being Addressed by a USEPA-approved TMDL; 5C = Being addressed by action other than a TMDL

[2] Units are in acres instead of miles.

Source: SWRCB 2022

SMP and County-Wide Water Quality Monitoring

As part of its implementation of the SMP, Valley Water removed sediment from 33.4 miles of creeks, rivers, canals, or channels in the Program Renewal Area from 2014 through 2020. Valley Water has been conducting water quality monitoring as required by permits issued by the San Francisco Bay and Central Coast RWQCBs for the multi-year sediment removal program. In general, turbidity, water temperature, DO, and pH were monitored upstream and downstream of any in-channel water diversions before, during, and following sediment removal activities in creeks. See Attachment E, "Water Quality Monitoring Plan" to the SMP Manual (**Appendix A**) for detailed information. Water quality monitoring for such activities will continue during the 2027-2036 Program Renewal.

With respect to pesticides/herbicides, Valley Water's Pesticide Policy requires that applicators of all pesticides must be licensed by the California Department of Pesticide Regulation (CDPR) or work under the supervision of someone licensed. Further, Valley Water implements its Aquatic Pesticide Application Plan (APAP), which requires monitoring.

Additionally, Valley Water participates in water quality monitoring under the Municipal Regional Stormwater NPDES permit at the county-wide level through SCVURPPP. This includes continuous and intermittent monitoring of various water quality constituents within Program Renewal Area watersheds. **Table 3.14-3** shows representative water quality measurements for several constituents/metrics at various locations along area creeks. **Table 3.14-4** shows additional water quality parameters at the same monitoring locations.

Table 3.14-3. Water Quality Measurements at 20 Sites in Santa Clara County – Water Year 2022

Station Code	Creek Name	Sample Date	DO (mg/L)	Temp.	Specific Cond. (uS/cm)	pH
AC002	Alamitos Creek	5/11/22	9.37	11.4	761.5	7.83
AC004	Alamitos Creek	5/2/22	9.97	10.9	414.8	7.05
CC001	Arroyo Calero	5/10/22	10.72	12.7	659	7.89
CC002	Arroyo Calero	5/10/22	7.27	13.4	609	7.05
CC003	Arroyo Calero	5/5/22	7.36	14.4	587.5	7.24
COY004	Coyote Creek	4/25/22	9.11	13.5	518.9	8.03
COY006	Coyote Creek	4/28/22	8.72	13.9	523.2	8.09
GC003	Guadalupe Creek	5/4/22	10.81	13.3	423.4	8.15
GC004	Guadalupe Creek	5/4/22	9.69	10.5	360.5	8.01
GC005	Guadalupe Creek	5/3/22	11.28	12.4	752.3	8.4
GC006	Guadalupe Creek	5/3/22	10.15	9.4	295.3	8.05
LG004	Los Gatos Creek	5/9/22	8.88	15.9	434	7.79
205R01706	Saratoga Creek	5/18/22	11.26	14.8	561	8.15
205R02474	Saratoga Creek	5/18/22	10.42	12	550	7.85
SC004	Stevens Creek	5/11/22	11.5	11.5	479	8.11
SC006	Stevens Creek	5/12/22	8.18	10.7	502.7	7.5
UP001	Upper Penitencia Creek	4/27/22	11.12	16.1	1673	**8.85**
UP002	Upper Penitencia Creek	4/27/22	11.0	10.8	1693	**8.57**
UP003	Upper Penitencia Creek	4/26/22	13.45	15.2	1604	8.43
UP004	Upper Penitencia Creek	4/26/22	11.95	11.9	807	8.16

Notes: Values exceeding MRP triggers or WQO are indicated in bold. Refer to the SCVURPPP report for the specific locations of monitoring stations.

Source: SCVURPPP 2023

Table 3.14-4. Nutrient and Conventional Constituent Concentrations in Water Samples Collected at 20 Sites in Santa Clara County – Water Year 2022

Station Code	Creek Name	Ammonia (as N) (mg/L)	Unionized Ammonia (as N) (mg/L)	Chloride (mg/L)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Total Kjeldahl Nitrogen (as N) (mg/L)	Total Nitrogen (mg/L)	Orthophosphate (as P) (mg/L)	Phosphorus (mg/L)	Silica (as SiO_2) (mg/L)	AFDM (g/m^2)	Chlorophyll a g/m^2)
	WQO	**NA**	**0.025[b]**	**250[a]**	**10[a]**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
AC002	Alamitos Creek	0.02	0.0002	47	0.37	0.002 J	0.04	0.41	0.014	0.023	24	33	88
AC004	Alamitos Creek	0.23	0.0005	8	0.057	0.001 J	0.11	0.17	0.049	0.058	19	40	130
CC001	Arroyo Calero	0.16	0.0025	71	0.39	0.002 J	0.11	0.50	0.04	0.049	38	16	73
CC002	Arroyo Calero	0.23	0.0006	74	0.26	0.001 J	0.17	0.43	0.026	0.057	29	45	33
CC003	Arroyo Calero	0.02	0.0001	79	0.04 J	0.001 J	0.22	0.26	0.015	0.023	22	113	79
COY004	Coyote Creek	0.15	0.0035	90	0.59	0.004 J	0.19	0.78	0.081	0.099	13	19	81
COY006	Coyote Creek	0.2	0.0055	91	0.66	0.001 J	0.3	0.96	0.096	0.11	13	17	85
GC003	Guadalupe Creek	0.02	0.0006	17	0.039 J	0.001 J	0.25	0.29	0.007 J	0.016	9.1	98	17
GC004	Guadalupe Creek	0.02	0.0004	9.4	0.01	0.001 J	0.3	0.32	0.002	0.004	11	69	330
GC005	Guadalupe Creek	0.02	0.0010	7.4	0.053	0.001 J	0.17	0.22	0.006 J	0.018	12	41	190
GC006	Guadalupe Creek	0.02	0.0004	6.4	0.097	0.002 J	0.25	0.35	0.007 J	0.017	13	39	350
LG004	Los Gatos Creek	0.19	0.0031	18	0.049 J	0.003 J	0.3	0.35	0.017	0.04	8.5	14	50
205R01706	Saratoga Creek	0.12	0.0040	34	0.034 J	< 0.001	0.36	0.40	0.032	0.038	16	24	150
205R02474	Saratoga Creek	0.076 J	0.0010	27	0.067	< 0.001	0.28	0.35	0.047	0.054	17	7.1	43
SC004	Stevens Creek	0.069 J	0.0016	24	0.05	0.002 J	0.33	0.38	0.053	0.066	14	101	54
SC006	Stevens Creek	0.22	0.0012	21	0.26	0.012	0.61	0.88	0.14	0.2	18	83	140
UP001	Upper Penitencia Cr	0.041 J	0.0062	190	0.034 J	0.001 J	0.3	0.34	0.002	0.011	3.8	16	59
UP002	Upper Penitencia Cr	0.02	0.0012	190	0.37	0.003 J	0.14	0.51	0.004 J	0.007 J	7	21	120
UP003	Upper Penitencia Cr	0.02	0.0012	130	1.3	0.015	0.58	1.90	0.008 J	0.03	12	17	91
UP004	Upper Penitencia Cr	0.02	0.0005	21	0.04 J	0.001 J	0.14	0.18	0.013	0.031	4	45	170

Notes: AFDM = Ash Free Dry Mass, NA = Not Applicable; mg/L = milligrams per liter; g/m^2 = grams per meter squared; WQO = water quality objective

J = The reported result is an estimate. The value is less than the reporting limit but greater than the detection limit.

[a] Chloride and nitrate WQOs only apply to waters with MUN designated beneficial uses, i.e., Los Gatos Creek.

[b] This threshold is an annual median value and is not typically applied to individual samples.

Source: SCVURPPP 2023

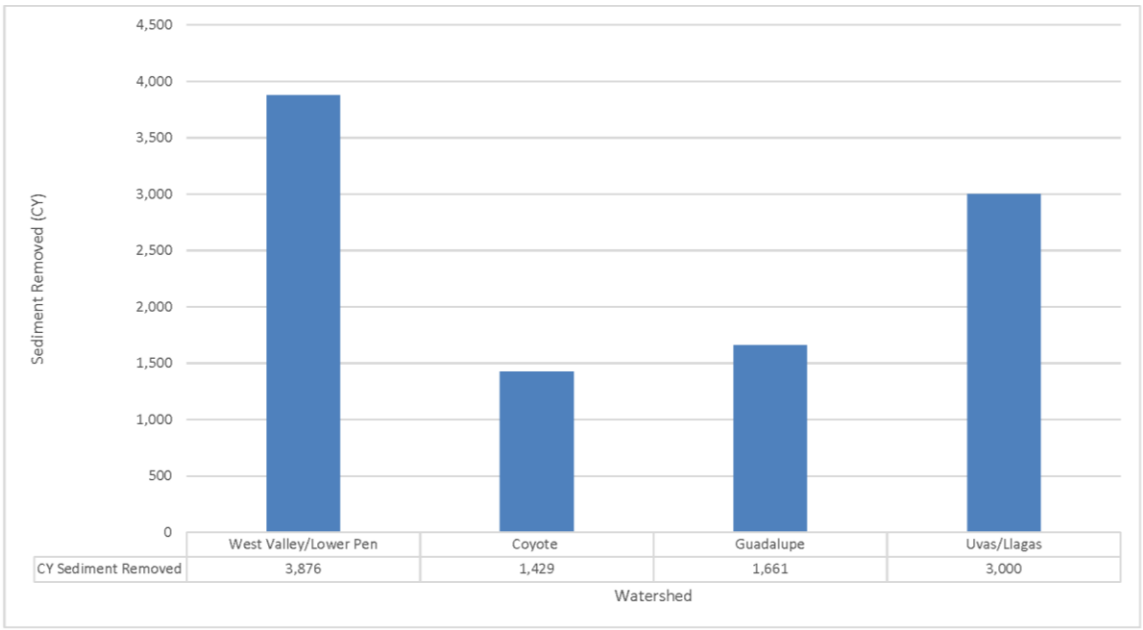
SMP Sediment Sampling

In addition to its water quality monitoring, Valley Water has sampled the sediments removed as part of its SMP implementation. Sediment sampling is undertaken to comply with Valley Water's current WDRs; characterize the sediments to establish if they are suitable for reuse as a construction material ("foundation limit"), a topsoil or soil amendment ("surface limit"); and determine what type of disposal may be required (e.g. reuse, landfill, hazardous waste collection site); as well as assist with determining the best management practices (BMPs) to implement in order to avoid and minimize impacts to water quality, aquatic life, and Beneficial Uses. An exceedance of a "hazardous limit" indicates that the soil should be considered hazardous waste.

Valley Water analyzes sediments that were removed as part of the SMP for total and dissolved metals, dissolved and total mercury, PCBs, polycyclic aromatic hydrocarbons (PAHs), pesticides, and toxicity (in tidal areas). Sediment testing results are reported in the Municipal Regional Stormwater Permit Annual Report (Valley Water 2023).

Figure 3.14-1 below shows the volume of sediment removed from Program Renewal Area watersheds during Fiscal Year 2022-2023. **Figure 3.14-2** and **Figure 3.14-3** show the amount of mercury and PCBs, respectively, removed from Program Renewal Area watersheds during the Fiscal Year 2022-2023 period based on the concentrations of these constituents in the removed sediment.

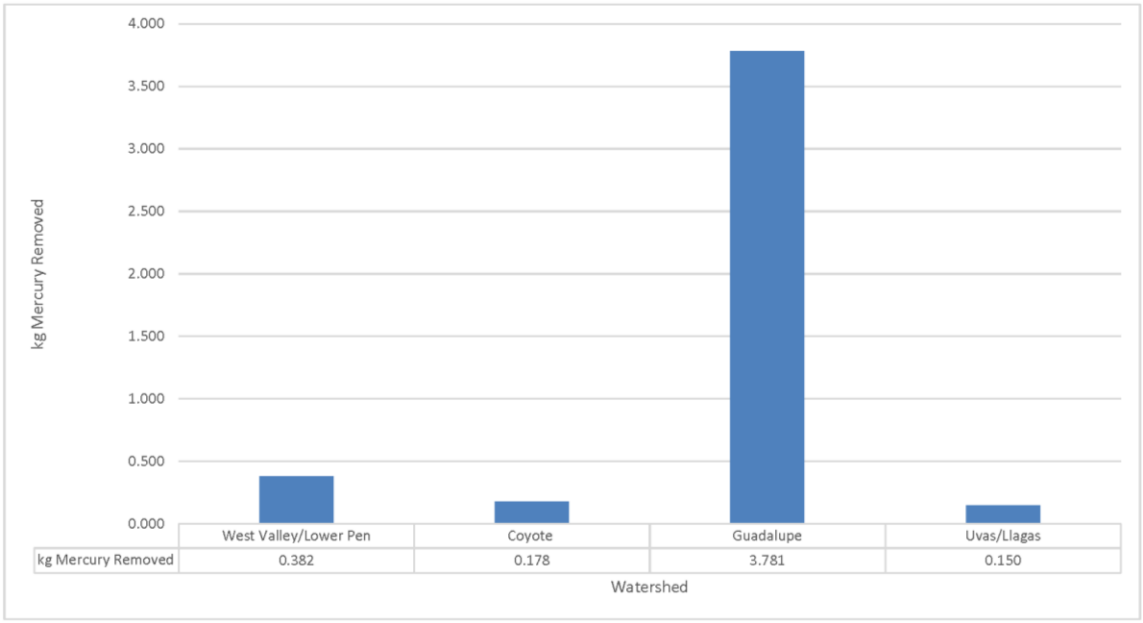
Figure 3.14-1. Sediment Removed by Watershed – Fiscal Year 2022-2023



Notes: CY = cubic yards

Source: Valley Water 2023

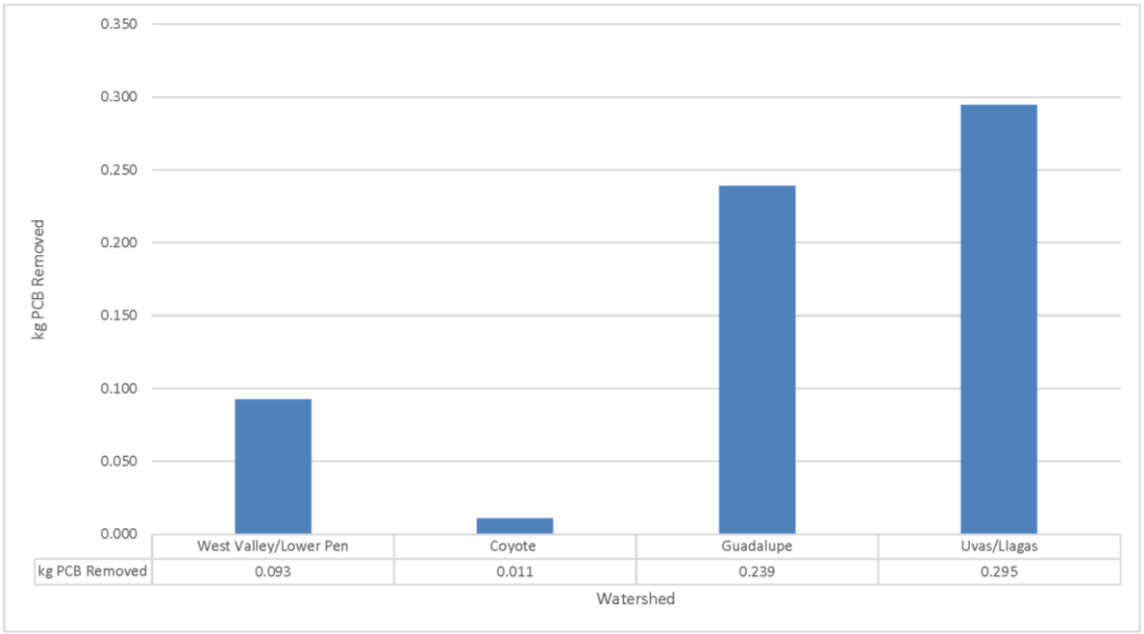
Figure 3.14-2. Total Mercury Removed by Watershed – Fiscal Year 2022-2023



Notes: kg = kilograms

Source: Valley Water 2023

Figure 3.14-3. Total PCBs Removed by Watershed – Fiscal Year 2022-2023



Notes: kg = kilograms; PCBs = polychlorinated biphenyls

Source: Valley Water 2023

Groundwater Quality

Two groundwater subbasins underlie the Program Renewal Area: the Santa Clara subbasin (Santa Clara Valley groundwater basin) and the Llagas subbasin (part of the Gilroy-Hollister groundwater basin). Valley Water further separates the Santa Clara Subbasin into the Santa Clara Plain and Coyote Valley management areas. The Santa Clara subbasin has an area of 153,600 acres (240 square miles) and is located within a structural trough parallel to the northwest-trending Coast Ranges. The subbasin extends from the Santa Clara County northern border to the groundwater divide near the town of Morgan Hill and is bound on the east by the Diablo Range and on the west by the Santa Cruz Mountains. Groundwater flows in the subbasin generally are to the north to San Francisco Bay. Groundwater levels within the subbasin declined by as much as 200 feet during the early 1900s through the mid-1960s, because of groundwater pumping. However, artificial recharge programs and decreases in pumping since 1965 generally have resulted in increases in groundwater levels (DWR 2004a).

In the Santa Clara subbasin, groundwater is generally of good quality and does not need treatment beyond disinfection (Valley Water 2021). Specifically, groundwater in the Santa Clara Plain has infrequent detections of water-quality parameters above health-based Maximum Contaminant Levels (MCLs). Calcium, magnesium, and bicarbonate are the dominant dissolved parameters in the Santa Clara Plain (Valley Water 2021). The 2019 median total dissolved solids (TDS) concentration in the principal aquifer zone was 410 mg/L. Some areas in the shallow aquifers adjacent to salt ponds and tidal creeks near San Francisco Bay have been affected by seawater intrusion, as indicated by higher chloride and other indicators in some shallow monitoring wells. Although some organic chemicals are detected in the Santa Clara Plain, detections are infrequent and are typically low concentrations (Valley Water 2021).

Within the Coyote Valley management area, groundwater is similarly typically of good quality. The primary exception is nitrate, which is detected above the MCL in some wells due to historic and ongoing sources (Valley Water 2021). The Coyote Valley is largely rural and agricultural, with ongoing nitrate sources including synthetic fertilizers and septic systems. The 2010-2019 median nitrate (N) concentration was 5.1 mg/L and concentration trends in Coyote Valley remain relatively stable or decreasing. With respect to inorganic constituents, calcium, magnesium, and bicarbonate are the dominant dissolved water-quality parameters. The 2019 median TDS concentration was 384 mg/L. Like the Santa Clara Plain, some organic chemicals are detected in the Coyote Valley, but the detections are infrequent and are typically low concentrations (Valley Water 2021).

The Llagas subbasin extends from the groundwater divide at Cochrane Road near the town of Morgan Hill in the north to the Pajaro River in the south and is bounded by the Diablo Range on the east and Santa Cruz Mountains on the west. The total area of the subbasin is approximately 56,000 acres (87 square miles). The Llagas subbasin drains to the south and ultimately to the Pajaro River through the river's tributaries, including Uvas and Llagas creeks. From 1969 through 2001, groundwater elevations in the Llagas subbasin remained fairly stable, except for declines and subsequent recoveries associated with the 1976–1977 and 1987–1992 drought periods. (DWR 2004b) Groundwater quality in the Llagas subbasin is generally of good quality and does not need treatment beyond disinfection at public water supply wells. However, the presence of elevated nitrate is an ongoing groundwater protection challenge – like Coyote Valley, except for the City of Gilroy, the Llagas Subbasin is largely rural

and agricultural, with ongoing nitrate sources including synthetic fertilizers and septic systems (Valley Water 2021). The 2010-2019 median nitrate concentration was 5.3 mg/L (as N) and concentration trends in Llagas remain relatively stable or decreasing. Historically, the presence of perchlorate was also of concern; however, recent perchlorate concentrations in the principal aquifer are now stable or decreasing as large-scale remediation efforts continue at the former Olin Corporation site, the cleanup of which is overseen by the Central Coast RWQCB. Valley Water's managed aquifer recharge is also acknowledged as contributing to improved perchlorate conditions due to the replenishment of large volumes of water (Valley Water 2021).

Calcium, magnesium, and bicarbonate are the dominant dissolved water-quality parameters in the Llagas Subbasin. The principal aquifer zone median TDS concentration was 404 mg/L in 2019. Although some organic chemicals are detected in the Llagas Subbasin, detections are infrequent and are typically low concentrations (Valley Water 2021).

3.14.4 Impact Analysis

Methodology

The baseline for this section is the existing conditions at the time of the May 2022 publication of the Notice of Preparation. This analysis evaluates potential impacts from the maintenance activities, including maintenance activities from the first and second iterations of the SMP that will continue to occur and new activities that will be introduced in the Program Renewal.

The methodology used to assess possible water quality impacts that could be caused by the Program Renewal utilized the following water quality standards and requirements:

1. Beneficial uses and water quality objectives established by the San Francisco Bay and Central Coast RWQCBs
2. Approved TMDLs
3. Local discharge requirements as issued in NPDES permits (the Municipal Regional Stormwater NPDES Permit and the NPDES General Permit for Aquatic Pesticide Use)

Potential impacts to water quality were assessed qualitatively, based on the degree to which the maintenance activities could result in violations of water quality standards, impairment of beneficial uses, or water quality conditions that could be harmful to aquatic life or human health. Each of these potential impacts (and beneficial outcomes, as applicable) is discussed below.

Potential temporary and permanent impacts from the maintenance activities (vegetation management, sediment removal, bank stabilization, downed tree management, management of animal conflicts, and minor maintenance) were evaluated based on the beneficial uses and existing impairments established by the San Francisco Bay and Central Coast RWQCBs, as shown in Tables 3.14-1 and 3.14-2. The assessment and significant determinations were guided by the significance criteria provided in the California Environmental Quality Act (CEQA) Guidelines, which are provided below. The analysis considered the implementation of applicable BMPs and adherence to existing laws and regulations.

Criteria for Determining Significance

For the purposes of this analysis, the Program Renewal would result in a significant impact on water quality if it would:

A. Violate any water quality standards or WDRs or otherwise substantially degrade surface water or groundwater quality; or

B. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would provide substantial additional sources of polluted runoff; or

C. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or

D. Conflict with or obstruct implementation of a water quality control plan.

Environmental Impacts

Impact WQ-1: Water Quality Degradation Resulting in Violation of Surface Water Quality Standards or WDRs; or Otherwise Substantially Degrade Surface Water Quality (Less than Significant)

Implementation of the Program Renewal would have potential to result in adverse effects on surface water quality through a variety of different mechanisms or based on different types of activities. These different types of impacts are described under separate subheadings below.

Ground-Disturbing Equipment and Vehicles, and Other Construction/Short-Term Effects

Various Program Renewal activities, including bank stabilization and sediment removal, would disturb soil on the bed and banks of streams. To a lesser extent, vegetation management, management of animal conflicts, and minor maintenance activities (e.g., limited grading) may involve ground disturbance near or within stream banks. Such ground disturbance could cause sediment to be eroded and discharged to water bodies and/or be transported downstream. Adverse effects of such sediment releases could include increased turbidity, which could subsequently cause an increase in water temperature and a corresponding decrease in DO levels. Discharge of fine sediment can also negatively impact beneficial uses associated with fish habitat.

Specifically, over the short-term, operation of heavy construction equipment in and around streams for Program Renewal activities would loosen soils, potentially leading to subsequent erosion and sedimentation. Establishment and use of temporary access roads or ramps for the activities could result in similar adverse effects, particularly if protective measures are not implemented. Bank stabilization activities would disturb bank soils and streambeds through the implementation of "hard" (e.g., concrete) or "soft" structures (e.g., pole-plantings), and through the potential creation of temporary access roads or ramps for these activities.

Moreover, removal of vegetation (e.g., cattails, woody vegetation, etc.) can increase erosion potential in the short-term where bare ground is left exposed. Sediment that erodes from

these areas during subsequent precipitation/flow events could increase turbidity and adversely affect beneficial uses in downstream locations. Additionally, apart from the active ground disturbance from construction equipment/activity during bank stabilization activities, erosion could occur during the period when banks are left exposed (e.g., before new plantings have become established) following stabilization treatments.

As described in Chapter 2, *Project Description* (and summarized below), however, Valley Water would implement a variety of BMPs, which would serve to reduce impacts of ground-disturbing activities. Implementation of these BMPs would substantially reduce the potential for substantial adverse effects on beneficial uses and violation of water quality standards. By limiting the work window, this would reduce potential that any loosened soils would be subjected to rainstorms that could wash sediments into the water column. Moreover, implementation of the erosion and sediment-control measures would stabilize the loosened/exposed soils and limit potential for substantial discharge of fine sediments to receiving waters.

Diversion and Dewatering

Given that Program Renewal activities may be located in waters subject to tidal flows or water bodies with flowing water, Valley Water may need to prevent inundation by tidal flows and divert flowing water around the maintenance activities by placement of diversion systems, which could include cofferdams, bypass pipes, and related facilities. This could be required for various types of activities but especially for sediment removal and bank stabilization activities. Generally, diversion systems would alter the natural flow of the stream and could increase turbidity as well as potentially expose streamflow to pollutants (e.g., equipment lubricants, fuels) associated with equipment and pumps operating within the area. There is also potential for groundwater to be encountered at work sites, which may require localized dewatering that could result in impacts.

Valley Water would implement several BMPs (summarized below) to limit the potential for adverse water quality impacts from diversion systems, including dewatering.

Hazardous Materials Releases or Contact with Surface Water

Various Program Renewal activities would require the use of heavy equipment and vehicles containing hazardous materials (e.g., fuel, oil, lubricants), many of which would be operated within and near streams. Additionally, such hazardous materials may be stored on-site at work areas or staging areas. See below regarding herbicide use in vegetation management activities and potential to encounter contaminated soils/sediments. Certain activities (e.g., bank stabilization, floodwall maintenance) also may involve the use of concrete products and/or paints and coatings that may pose a hazard to water quality. If these materials were to leak, spill, or otherwise be released during implementation of Program Renewal activities, this could result in adverse water quality impacts including violation of water quality objectives and impairment of beneficial uses.

As described in further detail in Section 3.8, "Hazards and Hazardous Materials," Program Renewal activities would be subject to various laws and regulations governing the use, storage, handling, and disposal of hazardous materials, which would also help to avoid or minimize impacts to water quality. This would include principally the Resource Conservation and Recovery Act (RCRA), which requires proper transportation, treatment, storage, and disposal of hazardous waste; the Hazardous Waste Control Act, which imposes more

stringent state-level requirements regarding hazardous waste than the federal RCRA; and potentially Unified Program requirements related to proper storage of hazardous materials and management of hazardous waste. All of these laws and regulations would help to ensure that hazardous materials used during Program Renewal activities are properly managed and not accidentally spilled or released, thus impacting water quality.

Additionally, as described in Chapter 2, *Project Description* (and summarized below), Valley Water would implement a number of BMPs regarding management of hazardous materials during Program Renewal activities, which would minimize the potential for impacts.

Pesticide Use

As described in Chapter 2, *Project Description,* implementation of the Program Renewal would involve the use of pesticides for vegetation management purposes (specifically, herbicides) and for management of animal conflicts (e.g., fumigation). If pesticides were improperly applied or spilled into local water bodies this could violate water quality objectives and impair beneficial uses.

Application of herbicides directly to water, would continue to comply with requirements of the NPDES General Permit for Aquatic Pesticide Use (see Section 3.8, "Hazards and Hazardous Materials"). This includes implementation of Valley Water's APAP, as well as compliance with applicable receiving water limitations. Compliance also would include following specific monitoring requirements, and Valley Water would follow all pesticide label instructions and any terms contained in use permits issued by the County Agricultural Commissioner. In addition, Valley Water's Pesticide Policy has the requirement that applicators of all pesticides need to be licensed by the CDPR or work under the supervision of someone who was licensed. This would ensure that pesticides/herbicides are not over-applied or improperly applied, such that they could potentially wash off-site to surface waters or directly result in toxicity effects for non-target organisms within streams. The use of certain fumigants, such as gas cartridges and aluminum phosphide, would be unlikely to result in impacts to water quality, as they would be applied directly to rodent burrows and would be prevented from diffusing out of treated burrows.

Generally, Valley Water continually works to minimize pesticide use as much as is practical. Valley Water uses currently uses Category III and IV herbicides, which are the least toxic chemical herbicides designated by USEPA, with the exception of triclopyr-choline and paraffinic oil, which are Category II (see Chapter 4 in the SMP Manual). Refer to Table 2-2 in Chapter 2, *Project Description,* for the specific herbicides that could be used under the Program Renewal and the projected annual usage amounts.

Moreover, Program Renewal activities would be subject to various other laws and regulations governing use of pesticides, including the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and CDPR's regulations related to pesticide registration, licensing, and use (see Section 3.8, "Hazards and Hazardous Materials" for detailed discussion). These laws and regulations would further help to ensure that pesticides and herbicides are applied properly and consistent with label instructions, such as to minimize any potential for water quality impacts.

Finally, Valley Water would implement BMPs (summarized below) for instream herbicide applications that would help to reduce impacts to water quality from herbicide application.

Disturbance of Existing Contaminated Sites and Soils

Valley Water-maintained channels receive and convey stormwater runoff from surrounding developed areas. As such, contaminants from stormwater runoff, such as metals and petroleum residues, can adhere to fine sediments that settle and accumulate in the stream bottom. In particular, sediments near storm drain outfalls may contain high concentrations of urban contaminants. As discussed in Section 3.8, "Hazards and Hazardous Materials," numerous sites in Santa Clara County are contaminated with hazardous materials, some of which may be nearby streams or whose contaminants could migrate towards streams over time. The Guadalupe River watershed, in particular, has been affected by historical mercury contamination, which is being addressed through a TMDL. As shown in Table 3.14-2, numerous waterbodies in the Program Renewal Area are listed as impaired for mercury, as well as various other pollutants (e.g., diazinon, PCBs, other types of agricultural pesticides), some of which could be adhered to sediment. To the extent Program Renewal activities were to take place in areas of existing contamination, contaminated sediments could be encountered and/or disturbed.

Sediment removal activities could potentially disturb contaminated sediments that may be present in subject streams, allowing the sediments to be transported downstream or otherwise mobilized into the water column. Similarly, disturbances of contaminated soils could occur (albeit likely to a lesser degree) as part of vegetation management (e.g., discing activities), minor maintenance grading, minor levee alterations to manage animal conflicts, or as part of bank stabilization activities. Mobilization/transport of contaminated sediments or soils associated with the Program Renewal could adversely affect water quality. However, in general, the removal of contaminated sediments in the Program Renewal Area by Program Renewal maintenance activities would reduce the amount of contamination in water bodies, meeting the goals of applicable TMDLs, including the Guadalupe River Mercury TMDL, San Francisco Bay Mercury TMDL, San Francisco Bay PCB TMDL, Urban Creeks Pesticide TMDL, Pajaro River Fecal Coliform TMDL, and Pajaro River Chlorpyrifos and Diazinon TMDL (see further discussion under "Long-Term Effects of Program Renewal Activities/Facilities" below).

As described above, Program Renewal activities would be subject to RCRA, the Hazardous Waste Control Act, and potentially Unified Program requirements related to proper management of hazardous waste (e.g., contaminated sediment). Additionally, Valley Water would implement BMPs (summarized below) to minimize the potential for disturbing existing contaminated sites or soils, such that water quality would not be substantially affected. Valley Water would also implement its Water Quality Monitoring Plan (see Attachment E to the SMP Manual), as applicable, and its Sediment Characterization Plan (see Attachment F to the SMP Manual), which would minimize the potential for impacts. Moreover, Valley Water would comply with permits issued by the RWQCBs, including any requirements for water quality protection.

Sediment Handling and Disposal

As described above, sediment removed from stream channels during stream maintenance activities could contain contaminants. Improper handling and disposal of such contaminated sediment, including improper stockpiling of sediment, could impact the beneficial uses of a stream. Also, sediment transport and disposal activities could result in sediment spills, which could impact water quality if sediments were spilled into the storm drain network or directly into water bodies.

Valley Water characterizes sediment to be removed from creeks in accordance with its Sediment Characterization Plan (Attachment F to SMP Manual). This includes testing the chemical and physical properties of the sediments both to effectively plan for disposal of the material and assist in determining the appropriate BMPs to implement to avoid and minimize impacts to water quality, aquatic life, and beneficial uses. This would help to ensure that any potentially contaminated sediment or soils is properly managed such as not adversely affect water quality.

Additionally, handling and disposal of any contaminated sediment encountered/removed as part of Program Renewal activities would be subject to applicable laws and regulations governing hazardous materials, as described in detail in Section 3.8, "Hazards and Hazardous Materials." As described above, this would include RCRA, the Hazardous Waste Control Act, and potentially Unified Program requirements. Compliance with these existing requirements, as well as implementation of BMPs (summarized below) would help to minimize potential for adverse water quality impacts from handling and disposal of contaminated sediment.

Long-Term Effects of Program Renewal Activities/Facilities

While Program Renewal activities would have some potential for short-term impacts to water quality, over the long-term, the impacts would largely be beneficial. Vegetation management, including removal of invasive species, serves to maintain channel conveyance capacity and can improve water quality. Similarly, sediment removal is needed to maintain conveyance capacity and prevent flooding (in which adverse water quality impacts can occur through the mobilization and release of pollutants present in the floodplain). Sediment removal can also benefit waterbodies by removing and disposing of polluted or contaminated sediment/soils. Bank stabilization projects reduce the rate of erosion at specific sites, which can lower sediment loads downstream. Additionally, Valley Water would implement BMPs that would protect vulnerable areas from potential downstream erosion impacts.

Other minor maintenance activities (e.g., access road maintenance, trash and debris removal, minor sediment removal, ongoing maintenance of restoration sites, and minor erosion repairs above the ordinary high-water mark) would similarly serve to protect/benefit water quality over the long-term. Many of these activities (e.g., contaminated sediment removal, bank stabilization) would also serve to implement TMDLs in effect for area waterbodies, such as the Guadalupe River Mercury TMDL, San Francisco Bay Mercury TMDL, San Francisco Bay PCB TMDL, Urban Creeks Pesticide TMDL, Pajaro River Fecal Coliform TMDL, Pajaro River Sediment TMDL, and the Pajaro River Chlorpyrifos and Diazinon TMDL.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to help minimize the potential for violations to water quality standards and WDRs and help to maintain surface water and groundwater quality. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* **Table 2-10**.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 unless an extension is granted, based upon identified criteria. BMP GEN-1 would minimize potential for erosion and discharge of sediment, as well as off-site movement of other pollutants (e.g., hazardous materials), associated with ground-disturbing activities.

- **BMP GEN-2: Instream Herbicide Application** would require that instream herbicide applications take place between June 15 and October 15 unless an extension is granted and imposes other requirements for herbicide application. BMP GEN-2 also specifies herbicides that may be applied under the Program Renewal and would help to minimize any potential impacts to stream water quality from the use of herbicides.
- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** prescribes measures to reduce potential for exposing soils high in mercury (and subsequent contamination of the environment or exposure of workers to safety hazards) specifically in the Guadalupe River watershed. This would including testing potentially contaminated sediment, performing remediation of affected soils, and providing personal protective equipment (PPE) to workers, as appropriate.
- **BMP GEN-21: In-Channel Minor Activities** would require that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel. This would minimize potential for disturbance of sediment within the channel and possible release of pollutants (e.g., hazardous materials) contained within construction equipment associated with the minor work activities.
- **BMP GEN-22: Employee/Contractor Training** would require that Valley Water staff and contractors receive annual training on BMPs, including how to avoid impacts on water quality during in-stream work. This would further minimize the potential for water quality impacts during Program Renewal activities.
- **BMP GEN-24: Work Site Housekeeping** would require that Valley Water employees and contractors maintain work sites in a neat and orderly condition, including storing materials and equipment to avoid erosion, leaks, or other potential impacts to water quality. BMP GEN-24 would require that debris (e.g., trash) be removed and disposed of, and would reduce potential for discharge of pollutants from work and staging areas, including leaks of hazardous materials associated with construction equipment.
- **BMP GEN-25: Erosion and Sediment Control Measures** would require that erosion and sediment control measures (e.g., silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization, wood chips, and straw mulch) be implemented during Program Renewal activities. BMP GEN-25 would prohibit discharge of oily, greasy, or sediment-laden runoff to any waterways, and would require visual inspections and corrective actions to ensure BMPs are functioning correctly. BMP GEN-25 would help to limit potential adverse water quality impacts from Program Renewal activities, particularly those involving ground disturbance.
- **BMP GEN-26: Staging and Stockpiling of Materials** would impose requirements on staging and stockpiling of materials to minimize potential impacts to water quality, such as locating staging areas outside of sensitive habitats and stockpiling/storing materials away from areas where they could spill into waterbodies or storm drains. BMP GEN-26 would require that stockpiled soils or other materials not remain exposed during the wet season, unless adequately stabilized/contained. These requirements would further minimize potential water quality impacts from construction site runoff.
- **BMP GEN-27: Sediment Transport** would require that truck beds used to transport spoils to disposal locations be lined with an impervious material or that the tailgate be blocked, so as to prevent sediment-laden water from being released back into waterways.

- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing Program Renewal work areas. When temporary access points are necessary, disturbed areas must be revegetated or otherwise stabilized, and disturbance of the stream bottom will generally be avoided. These requirements will further limit potential erosion and sedimentation associated with Program Renewal activities.
- **BMP GEN-29: On-Site Hazardous Materials Management** would require proper management of hazardous materials used during Program Renewal activities; in particular, hazardous materials and wastes would need to be stored in watertight containers and with appropriate secondary containment. Generators and other equipment with potential to leak or spill fuels and lubricants would need to be stored and operated with secondary containment, and other measures to prevent release of hazardous materials/wastes would be implemented.
- **BMP GEN-30: Existing Hazardous Materials** would require that if hazardous materials are found, they would be carefully removed and disposed of according to applicable regulatory requirements, and that Valley Water staff wear proper protective gear and store the materials in an appropriate hazardous waste container until the materials can be properly disposed of at a hazardous waste facility.
- **BMP GEN-31: Paving and Asphalt Work** would require that Valley Water avoid paving and seal coating in wet weather or when rain is forecasted, so as to prevent uncured materials from contacting stormwater runoff. BMP GEN-31 also includes other measures to prevent pollution of stormwater due to contact with fresh asphalt and concrete and would minimize potential water quality impacts associated with this type of work under the Program Renewal.
- **BMP GEN-32: Painting and Paint Removal** would prohibit cleaning brushes or rinsing paint containers into a street, gutter, storm drain, or stream, and also includes measures for managing and disposing of paint chips and residue. BMP GEN-32 would limit water quality impacts from this type of work.
- **BMP GEN-33: Spill Prevention and Response** would implement measures to prevent the accidental release of hazardous materials (e.g., chemicals, fuels, lubricants), and require that materials for cleanup of spills are available on site. BMP GEN-33 also specifies protocols for spill response and reporting. These measures and protocols would ensure that any spills of hazardous materials associated with Program Renewal activities are minimized, as feasible.
- **BMP GEN-34: Existing Hazardous Sites** would require that Valley Water conduct a search for known contaminated sites upon selection of Program Renewal maintenance site locations using the SWRCB's GeoTracker database. For any ground-disturbing maintenance activities within 1,500 feet of "open" sites, Valley Water would work with the RWQCB case manager to ensure proposed activities do not affect cleanup or monitoring activities or threaten the public or environment.
- **BMP GEN-37: Vehicle and Equipment Maintenance** would require that vehicles and equipment used in Program Renewal activities be kept clean without excessive build-up of oil and grease, and that equipment used in the creek channel be inspected for leaks each day prior to initiation of work. Additionally, BMP GEN-37 would require that equipment servicing and repairs be performed in a location away from the creek channel or where pollutants could be released to surface waters.

- **BMP GEN-38: Vehicle Cleaning** would require that equipment be cleaned prior to transfer and use in a different watershed, so as to prevent the spread of sediment, pathogens, and exotic/invasive species. BMP GEN-38 would prohibit wash water from being discharged to creek channels or storm channels without being subjected to adequate filtration.
- **BMP GEN-39: Vehicle and Equipment Fueling** would prohibit fueling of vehicles and equipment in the channel or immediate floodplain unless the relevant equipment cannot be relocated. Designated fueling locations should be specified (away from waters) and secondary containment must be provided. These requirements would minimize potential for accidental releases of fuel to water bodies during Program Renewal activities.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** would require that water be diverted around the work area via a temporary dam and/or bypass for work within non-tidal streams and channels. Measures would be prescribed to avoid and minimize impacts to water quality from dewatering, such as protecting flows from maintenance activity-related pollutants (e.g., soils, equipment lubricants, or fuels) and using filtration devices or settling basins, as appropriate, to minimize turbidity effects.
- **BMP GEN-41: Dewatering in Tidal Work Areas** would prescribe requirements for dewatering work areas in tidal areas. If cofferdam bypass pipes are to be used, water discharged from such pipes would be required not to exceed 50 nephelometric turbidity units (NTUs) above background levels.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** would require that pumps and generators used during dewatering operations be maintained and operated in a manner that minimizes impacts to water quality (e.g., generators to be stored or operated with secondary containment). This requirement would further minimize any potential impacts associated with dewatering during Program Renewal activities.
- **BMP SED-1: Groundwater Management** would require that encountered groundwater be pumped out of work sites (unless the work activity is not causing water quality degradation in a live stream), and that water quality monitoring be conducted. Excess sediment would be removed from extracted water prior to the water re-entering a creek.
- **BMP SED-4: Berm Bypass** would require that where sediment removal is accomplished without a bypass by removing alternating cells, the berm between the work and the live channel is wide enough to prevent introduction of turbid water into the live channel.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** would require that the toe of the bank be protected by leaving vegetation to the maximum extent possible, such as to minimize the potential effect of localized erosion. This requirement would reduce potential for discharge of sediment to receiving waters associated with the Program Renewal activities over the long term.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low–ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** would require that the site design for bank stabilization activities provide proactive protection of vulnerable areas within the reach of the worksite (e.g., appropriately keyed-in coir

logs, riparian planting, strategic placement of rock, and flow deflectors) to prevent potential downstream erosion impacts. Bank stabilization shall also include appropriate transition designs to prevent potential erosion impacts.

- **BMP BANK-2: Concrete Use Near Waterways** would require that fresh concrete be isolated until it no longer poses a threat to water quality, by using various measures (e.g., wet-sacked concrete and poured concrete to be excluded from the wetted channel for 30 days; dry-sacked concrete prohibited from use in the channel; designated location for cleaning out concrete transit vehicles; adequately sized temporary concrete washout facilities, and prohibiting slurry wastes from entering storm drains or watercourses).
- **BMP REVEG-1: Seeding** would require that sites where maintenance activities result in exposed soil be stabilized to prevent erosion; specifically, through seeding with native seed after maintenance activities are complete.
- **BMP ANI-5: Slurry Mixture near Waterways** would require that slurry-type mixes used to fill rodent burrows be prevented from entering waterways through use of appropriate erosion control methods and complying with manufacturer's specifications.

Conclusion

Given implementation of applicable Valley Water BMPs and compliance with relevant existing laws and regulations (see discussion above), Program Renewal activities would not violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface water quality. As a result, this impact would be **less than significant**. No mitigation is required.

Mitigation Measures: No mitigation is required.

Impact WQ-2: Water Quality Degradation Resulting in Violation of Ground Water Quality Standards; or Otherwise Substantially Degrade Ground Water Quality (Less than Significant)

As discussed under Impact WQ-1, Program Renewal activities would have potential to impact water quality through several different mechanisms or with respect to different specific activities. This includes use of ground-disturbing equipment and vehicles, diversions/dewatering, accidental or inadvertent hazardous materials releases, pesticide use, disturbance of existing contaminated sites and soils, and sediment handling and disposal. In general, such activities would mostly affect surface waters; however, groundwater could also be affected. If hazardous materials (e.g., fuel, oil, etc.) contained within construction equipment were to leak or otherwise be released, these pollutants could ultimately seep into soils and migrate into the groundwater below – resulting in a degradation of groundwater quality and potential violation of water quality standards. Additionally, pesticides, to the extent these were applied improperly, could ultimately migrate to underlying groundwater, thereby causing contamination (USGS 2018).

Diversion/dewatering activities could potentially increase potential for groundwater quality impacts, as the exposed streambed may pose a more direct route for spilled or leaked materials to infiltrate the soil and ultimately reach the groundwater. Additionally, where groundwater may be encountered at work sites, due to high groundwater levels, the risk for groundwater contamination due to Program Renewal activities would be higher.

Further, as discussed in Impact WQ-1, Program Renewal activities could disturb existing contaminated sites and soils, which could then mobilize the existing contaminants and allow them to migrate to groundwater. Handling and disposal of removed contaminated sediment, if done improperly, would also create an opportunity for groundwater quality to be adversely affected. These types of effects could occur during sediment removal, bank stabilization, vegetation management, management of animal conflicts, and minor maintenance activities. Erosion and sedimentation, while potentially detrimental to surface water (as discussed in Impact WQ-1), would not substantially affect groundwater – because the eroded materials could not reach the groundwater aquifer without becoming entrained in the intervening soil layers.

As described in Chapter 2, *Project Description,* and listed/summarized below, however, Valley Water would implement various BMPs that would reduce potential for adverse impacts to groundwater quality. This would include sediment testing and remediation of contaminated soils, measures to prevent hazardous materials spills/releases and ensure proper management of hazardous materials, identification and avoidance of existing hazardous materials sites, diversion/dewatering requirements, and groundwater management protocols. Furthermore, the Program Renewal would require new or extended permits from various regulatory agencies, many of which would contain requirements and conditions that would be protective of water quality. This would include CWA Section 401 Water Quality Certifications (San Francisco Bay and Central Coast RWQCBs), CWA Section 404 permit (USACE), and Lake and Streambed Alteration Agreement (LSAA) pursuant to Fish and Game Code Section 1602 (California Department of Fish and Wildlife [CDFW]), among others – refer to **Table 2-9** in Chapter 2, *Project Description*.

Compliance with applicable requirements in the Municipal Regional Stormwater NPDES Permit (e.g., water quality monitoring, construction site controls, and pesticide toxicity control) similarly would help protect water quality during Program Renewal activities. Additionally, as noted above and described in further detail in Section 3.8, "Hazards and Hazardous Materials," Program Renewal activities would be subject to various laws and regulations governing the use, storage, handling, and disposal of hazardous materials, which would also help to avoid or minimize impacts to groundwater quality. This would include principally RCRA, which requires proper transportation, treatment, storage, and disposal of hazardous waste (e.g., contaminated sediment); FIFRA, which governs the use of pesticides; the Hazardous Waste Control Act, which imposes more stringent state-level requirements regarding hazardous waste than the federal RCRA; CDPR regulations related to pesticide registration, licensing, and use; and the SWRCB's General NPDES Aquatic Pesticide Use Permit for Aquatic Weed Control (Water Quality Order No. 2013-002-DWQ), which imposes discharge requirements related to use of pesticides and herbicides in aquatic environments. All of these laws and regulations would help to ensure that contaminated wastes/sediment are not improperly handled or disposed of, so as not to cause adverse groundwater impacts; and ensure that herbicides are not improperly or excessively applied as part of Program Renewal activities.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to help minimize the potential for violations of water quality standards and WDRs and help to maintain groundwater quality. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** prescribes measures to reduce potential for exposing soils high in mercury (and subsequent contamination of the environment or exposure of workers to safety hazards) specifically in the Guadalupe River watershed. This would including testing potentially contaminated sediment, performing remediation of affected soils, and providing personal protective equipment (PPE) to workers, as appropriate.
- **BMP GEN-21: In-Channel Minor Activities** requires that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel. This would minimize potential for disturbance of sediment within the channel and possible release of pollutants (e.g., hazardous materials) contained within construction equipment associated with the minor work activities.
- **BMP GEN-22: Employee/Contractor Training** would require that Valley Water staff and contractors receive annual training on BMPs, including how to avoid impacts on water quality during in-stream work. This would further minimize the potential for water quality impacts during Program Renewal activities.
- **BMP GEN-24: Work Site Housekeeping** would require that Valley Water employees and contractors maintain work sites in a neat and orderly condition, including storing materials and equipment to avoid erosion, leaks, or other potential impacts to water quality. BMP GEN-24 requires that debris (e.g., trash) be removed and disposed of, and would reduce potential for discharge of pollutants from work and staging areas, including leaks of hazardous materials associated with construction equipment.
- **BMP GEN-26: Staging and Stockpiling of Materials** imposes requirements on staging and stockpiling of materials to minimize potential impacts to water quality, such as locating staging areas outside of sensitive habitats and stockpiling/storing materials away from areas where they could spill into waterbodies or storm drains. BMP GEN-26 requires that stockpiled soils or other materials not remain exposed during the wet season, unless adequately stabilized/contained. These requirements would further minimize potential water quality impacts from construction site runoff.
- **BMP GEN-27: Sediment Transport** requires that truck beds used to transport spoils to disposal locations be lined with an impervious material or that the tailgate be blocked, so as to prevent sediment-laden water from being released back into waterways.
- **BMP GEN-29: On-Site Hazardous Materials Management** would require proper management of hazardous materials used during Program Renewal activities; in particular, hazardous materials and wastes would need to be stored in watertight containers and with appropriate secondary containment. Generators and other equipment with potential to leak or spill fuels and lubricants would need to be stored and operated with secondary containment, and other measures to prevent release of hazardous materials/wastes would be implemented.
- **BMP GEN-30: Existing Hazardous Materials** would require that if hazardous materials are found, they would be carefully removed and disposed of according to applicable regulatory requirements, and that Valley Water staff wear proper protective gear and store the materials in an appropriate hazardous waste container until the materials can be properly disposed of at hazardous waste facility.
- **BMP GEN-32: Painting and Paint Removal** prohibits cleaning brushes or rinsing paint containers into a street, gutter, storm drain, or stream, and also includes measures for

managing and disposing of paint chips and residue. BMP GEN-32 would limit water quality impacts from this type of work.

- **BMP GEN-33: Spill Prevention and Response** would implement measures to prevent the accidental release of hazardous materials (e.g., chemicals, fuels, lubricants), and require that materials for cleanup of spills are available on site. BMP GEN-33 also specifies protocols for spill response and reporting. These measures and protocols would ensure that any spills of hazardous materials associated with Program Renewal activities are minimized, as feasible.
- **BMP GEN-34: Existing Hazardous Sites** would require that Valley Water conduct a search for known contaminated sites upon selection of Program Renewal maintenance site locations using the SWRCB's GeoTracker database. For any ground-disturbing maintenance activities within 1,500 feet of "open" sites, Valley Water would work with the RWQCB case manager to ensure proposed activities do not affect cleanup or monitoring activities or threaten the public or environment.
- **BMP GEN-37: Vehicle and Equipment Maintenance** requires that vehicles and equipment used in Program Renewal activities be kept clean without excessive build-up of oil and grease, and that equipment used in the creek channel be inspected for leaks each day prior to initiation of work. Additionally, BMP GEN-37 requires that equipment servicing and repairs be performed in a location away from the creek channel or where pollutants could be released to surface waters.
- **BMP GEN-39: Vehicle and Equipment Fueling** would prohibit fueling of vehicles and equipment in the channel or immediate floodplain unless the relevant equipment cannot be relocated. Designated fueling locations should be specified (away from waters) and secondary containment must be provided. These requirements would minimize potential for accidental releases of fuel to water bodies during Program Renewal activities.
- **BMP GEN-40: Diversion and/or Dewatering for Non-Tidal Sites** requires that water be diverted around the work area via a temporary dam and/or bypass for work within non-tidal streams and channels. Measures would be prescribed to avoid and minimize impacts to water quality from dewatering, such as protecting flows from maintenance activity-related pollutants (e.g., soils, equipment lubricants, or fuels) and using filtration devices or settling basins, as appropriate, to minimize turbidity effects.
- **BMP GEN-41: Diversion and/or Dewatering in Tidal Work Areas** prescribes requirements for dewatering work sites in tidal areas. If cofferdam bypass pipes are to be used, water discharged from such pipes would be required not to exceed 50 nephelometric turbidity units (NTUs) above background levels.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** requires that pumps and generators used during dewatering operations be maintained and operated in a manner that minimizes impacts to water quality (e.g., generators to be stored or operated with secondary containment). This requirement would further minimize any potential impacts associated with dewatering during Program Renewal activities.
- **BMP SED-1: Groundwater Management** would require that encountered groundwater be pumped out of work sites (unless the work activity is not causing water quality degradation in a live stream), and that water quality monitoring be conducted. Excess sediment would be removed from extracted water prior to the water re-entering a creek.

- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation to reduce impacts to the streambed.

Conclusion

Given implementation of applicable Valley Water BMPs and compliance with relevant existing laws and regulations, Program Renewal activities would not violate groundwater quality standards or waste discharge requirements, or otherwise substantially degrade groundwater quality. As a result, this impact would be **less than significant**. No mitigation is required.

Mitigation Measures: No mitigation is required.

Impact WQ-3: Create or Contribute Runoff Water that Would Provide Substantial Additional Sources of Polluted Runoff (Less than Significant)

The Program Renewal would not involve the construction of large areas of impermeable surfaces that would contribute substantial additional sources of polluted runoff. In addition, implementing the Program Renewal would not require expansion of existing channels within the Program Renewal Area and would not alter the quantity of stormwater runoff conveyed from adjacent lands and received in stream channels. As described above under Impact WQ-1, many Program Renewal activities would have potential to reduce/eliminate sources of pollutants over the long-term, which would serve to benefit the quality of runoff water. For example, sediment removal may improve water quality in a channel by removing existing contamination from the stream (both trash and contaminated sediments). Bank stabilization activities would improve stormwater quality by reducing the potential for erosion and sediment transport from unstable banks. As such, although the Program Renewal would not increase surface runoff generation, it could reduce pollutants sources for runoff passing over/through Program Renewal areas.

Over the short-term, as described in Impact WQ-1, the Program Renewal would use hazardous materials, primarily associated with heavy equipment and vehicles (e.g., fuel, oil, lubricants), which would be required for various activities. Additionally, vegetation management would require use of herbicides (refer to Chapter 2, *Project Description*). Use and storage of these materials would create the potential for leaks or spills, which could subsequently result in generation of polluted runoff (e.g., if precipitation events were to wash the spilled materials into nearby surface waterbodies). However, Valley Water would implement a variety of BMPs (summarized below) which would serve to minimize any potential for polluted runoff generation.

Additionally, as stated above under Impact WQ-2, compliance with applicable requirements in the Municipal Regional Stormwater NPDES Permit (e.g., water quality monitoring, construction site controls, and pesticide toxicity control) similarly would help protect water bodies from sources of polluted runoff during Program Renewal activities.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to help minimize the potential to create substantial additional sources of polluted runoff. A full description of each BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-24: Work Site Housekeeping** would require good housekeeping measures (e.g., storing materials and equipment to avoid leaks and accidental releases of hazardous materials) and would reduce potential for pollutants to enter runoff water.
- **BMP GEN-29: On-Site Hazardous Materials Management** would require proper management of hazardous materials used during Program Renewal activities; in particular, hazardous materials and wastes would need to be stored in watertight containers and with appropriate secondary containment. Generators and other equipment with potential to leak or spill fuels and lubricants would need to be stored and operated with secondary containment, which would minimize pollutants from entering runoff water.
- **BMP GEN-33: Spill Prevention and Response** would implement measures to prevent the accidental release of hazardous materials (e.g., chemicals, fuels, lubricants), and require that materials for cleanup of spills are available on site. These measures would also help to ensure that any water runoff as a result of Program Renewal activities does not contain pollutants.

Conclusion

Implementation of the above-described BMPs, along with compliance with relevant existing laws and regulations related to hazardous materials (refer to Section 3.8, "Hazards and Hazardous Materials," for detailed discussion), would ensure that Program Renewal activities would not alter drainage patterns such as to generate substantial amounts of polluted runoff. As a result, with the inclusion of these BMPs, Program Renewal activities would not result in significant impacts; the impact would be **less than significant**. No mitigation is required.

Mitigation Measures: No mitigation is required.

Impact WQ-4: In Flood Hazard, Tsunami, or Seiche Zones, Risk Release of Pollutants Due to Project Inundation (Less than Significant)

As described in Section 3.9, "Hydrology and Geomorphology," Program Renewal activities would largely take place within stream channels or adjacent floodplains, and thus would generally occur within flood hazard zones. To a lesser extent, Program Renewal activities occurring near the San Francisco Bay shoreline may be within the tsunami hazard zone, as mapped by the California Department of Conservation (CDOC; 2024). Additionally, there is some potential that Program Renewal activities occurring in immediate proximity to large standing bodies of water (e.g., reservoirs) could be exposed to a seiche wave. Therefore, given the Program Renewal's use of hazardous materials (e.g., fuel, oil, pesticides/herbicides, etc.) during maintenance activities, there would be some potential for a flood, tsunami, or seiche to occur at the same time that activities are taking place. This could result in a release of pollutants due to inundation of Program Renewal work areas. Generally, however, the probability of such a confluence of events in any given year would be very low. Additionally, Valley Water would implement BMPs (summarized below) which would minimize the likelihood of a release of pollutants associated with flooding, tsunami, or seiche.

While tsunamis or seiches associated with earthquakes could occur at any time, floods would be expected to occur during the rainy season (i.e., November to April) in California. As such, BMPs requiring that Program Renewal maintenance activities generally occur during the dry season would substantially limit the potential that equipment or stored hazardous materials would be in the flood zone at the time of a flood event. Moreover, BMPs requiring proper

storage of hazardous materials and location of storage/fueling areas away from waters would limit the possibility of a substantial release of pollutants.

Over the longer term (once maintenance activities are completed at a given site), the Program Renewal would not introduce any new permanent sources of pollutants to the area. Rather, as discussed in Impacts WQ-1 and WQ-2, the Program Renewal activities would largely remove existing sources of pollution, such as contaminated sediment and trash. Implementation of the Program Renewal also would reduce the extent and severity of future flooding events; indeed, one of the primary goals of the Program Renewal is to "maintain the flow conveyance capacity of Valley Water flood protection facilities to reduce flood risks and ensure public safety." Sediment removal and vegetation management activities, in particular, would restore channel conveyance capacity that has become depleted over time. Therefore, the Program Renewal would help reduce risk of pollutant release during future flooding events.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal to help reduce the risk of the release of pollutants due to project inundation associated with flooding, tsunami, or seiche. A full description of each BMP is provided in Chapter 2, *Project Description*, Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities (often involving heavy equipment containing hazardous materials) occur between June 15 and October 15 (unless an extension is granted).
- **BMP GEN-2: Instream Herbicide Application** would require that instream herbicide application occur between June 15 and October 15 (work window may be extended until December 31 or until a significant rainfall event is forecasted).
- **BMP GEN-26: Staging and Stockpiling of Materials** would require locating staging areas outside of sensitive habitats (e.g., riparian areas) and stockpiling/storing materials away from where they could spill into waterbodies and storm drains.
- **BMP GEN-29: On-Site Hazardous Materials Management** would require that hazardous materials and wastes be stored in watertight containers with appropriate secondary containment.
- **BMP GEN-37: Vehicle and Equipment Maintenance** would require that equipment servicing and repairs be performed in a location away from the creek channel.
- **BMP GEN-39: Vehicle and Equipment Fueling** would require that designated fueling locations be located away from waters.

Conclusion

With implementation of the above-described BMPs, the Program Renewal would not substantially risk release of pollutants due to Program Renewal inundation associated with flooding, tsunami, or seiche. The impact would be **less than significant**. No mitigation is required.

Mitigation Measures: No mitigation is required.

Impact WQ-5: Conflict with or Obstruct Implementation of a Water Quality Control Plan (Less than Significant with Mitigation)

As discussed in Impact WQ-1, implementation of the Program Renewal would have potential to impact water quality through several different mechanisms. This includes ground disturbance from heavy equipment and vehicles; diversion/dewatering activities; use and storage of hazardous materials, including pesticides and herbicides; disturbance of existing contaminated sites or soils, and sediment handling and disposal. Portions of the Program Renewal Area are under the jurisdiction of either the San Francisco Bay RWQCB (Region 2) and Central Coast RWQCB (Region 3). As such, it is subject to the Basin Plans for the respective RWQCBs, including the beneficial uses of specific waterbodies identified in the plans (refer to Table 3.14-1) and the water quality objectives that serve to protect/achieve the beneficial uses.

If adequate precautions are not taken and activities are not managed properly, the short-term water quality effects from Program Renewal maintenance activities could conflict with or obstruct implementation of the San Francisco Bay and Central Coast Basin Plans. This could also include impacts to stream habitat characteristics and functions, such as modifications to the stream's substrate by hardening the bed or banks, and habitat degradation through removal of vegetation. Additionally, indirect impacts could include removal of vegetation that provides shade, nesting habitat for birds and shelter for wildlife, and nutrient cycling in a stream's ecosystem (San Francisco Bay RWQCB 2022b). This, in turn, could adversely affect beneficial uses, such as COLD, WARM, EST, MIGR, RARE, and SPWN. However, as described in Impact WQ-1 and summarized below, Valley Water would implement a number of BMPs that would minimize the Program Renewal's potential effects on surface and ground water quality. Direct and indirect impacts on in-stream habitat are evaluated in detail in Section 3.4, "Biological Resources." In short, given implementation of Valley Water BMPs, VHP conditions, and Mitigation Measures BIO-3 (Augmentation of Spawning Gravel), BIO-4 (Augmentation of Instream Complexity), and BIO-5 (Salmonid Habitat Restoration Projects), the impacts of Program Renewal activities on aquatic habitat would be less than significant with mitigation. As such, the habitat-related beneficial uses in applicable streams would not be substantially adversely affected.

Additionally, as described above, Valley Water would comply with the requirements of the NPDES General Permit for Aquatic Pesticide Use, including effluent and receiving water limitations. This would further reduce any adverse water quality effects of herbicide use (e.g., toxicity) under the Program Renewal. The Program Renewal would also comply with applicable existing laws and regulations pertaining to hazardous materials/waste management (refer to Section 3.8, "Hazards and Hazardous Materials"). As discussed above, this includes RCRA, the Hazardous Waste Control Act, Unified Program, FIFRA, and CDPR regulations.

Over the longer term, the Program Renewal would largely benefit water quality, as it would remove potential existing sources of pollution/contamination (e.g., through sediment and trash removal). Additionally, the Program Renewal would reduce the risk of flooding, which would be beneficial for water quality – for example, floods can mobilize various pollutants that may be present within the floodplain resulting in discharges to sensitive waterbodies. Inclusion of BMPs for banks stabilization and erosion control would reduce ongoing sources of erosion/sediment to surface streams. Altogether, the Program Renewal would help to implement the respective Basin Plans and TMDLs (such as the Guadalupe River Mercury

TMDL, San Francisco Bay Mercury TMDL, San Francisco Bay PCB TMDL, Urban Creeks Pesticide TMDL, Pajaro River Fecal Coliform TMDL, Pajaro River Sediment TMDL, and the Pajaro River Chlorpyrifos and Diazinon TMDL) by addressing existing sources of pollution and not introducing new sources of pollution over the long term.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal so that Valley Water would remain in compliance with water quality control plans. A full description of each BMP is provided in Chapter 2, *Project Description*, Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 unless an extension is granted, based upon identified criteria. BMP GEN-1 would minimize potential for erosion and discharge of sediment, as well as off-site movement of other pollutants (e.g., hazardous materials), associated with ground-disturbing activities.
- **BMP GEN-2: Instream Herbicide Application** would require that instream herbicide applications take place between June 15 and October 15 unless an extension is granted and imposes other requirements for herbicide application. BMP GEN-2 also specifies herbicides that may be applied under the Program Renewal and would help to minimize any potential impacts to stream water quality from the use of herbicides.
- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** prescribes measures to reduce potential for exposing soils high in mercury (and subsequent contamination of the environment or exposure of workers to safety hazards) specifically in the Guadalupe River watershed. This would including testing potentially contaminated sediment, performing remediation of affected soils, and providing PPE to workers, as appropriate.
- **BMP GEN-21: In-Channel Minor Activities** requires that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel. This would minimize potential for disturbance of sediment within the channel and possible release of pollutants (e.g., hazardous materials) contained within construction equipment associated with the minor work activities.
- **BMP GEN-22: Employee/Contractor Training** would require that Valley Water staff and contractors receive annual training on BMPs, including how to avoid impacts on water quality during in-stream work. This would further minimize the potential for water quality impacts during Program Renewal activities.
- **BMP GEN-24: Work Site Housekeeping** would require that Valley Water employees and contractors maintain work sites in a neat and orderly condition, including storing materials and equipment to avoid erosion, leaks, or other potential impacts to water quality. BMP GEN-24 requires that debris (e.g., trash) be removed and disposed of, and would reduce potential for discharge of pollutants from work and staging areas, including leaks of hazardous materials associated with construction equipment.
- **BMP GEN-25: Erosion and Sediment Control Measures** would require that erosion and sediment control measures (e.g., silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization, wood chips, and straw mulch) be implemented during Program Renewal activities. BMP GEN-25 prohibits discharge of oily, greasy, or sediment-laden runoff to any waterways, and requires

visual inspections and corrective actions to ensure BMPs are functioning correctly. BMP GEN-25 would help to limit potential adverse water quality impacts from Program Renewal activities, particularly those involving ground disturbance.

- **BMP GEN-26: Staging and Stockpiling of Materials** imposes requirements on staging and stockpiling of materials to minimize potential impacts to water quality, such as locating staging areas outside of sensitive habitats and stockpiling/storing materials away from areas where they could spill into waterbodies or storm drains. BMP GEN-26 requires that stockpiled soils or other materials not remain exposed during the wet season, unless adequately stabilized/contained. These requirements would further minimize potential water quality impacts from construction site runoff.
- **BMP GEN-27: Sediment Transport** requires that truck beds used to transport spoils to disposal locations be lined with an impervious material or that the tailgate be blocked, so as to prevent sediment-laden water from being released back into waterways.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing Program Renewal work areas. When temporary access points are necessary, disturbed areas must be revegetated or otherwise stabilized, and disturbance of the stream bottom will generally be avoided. These requirements will further limit potential erosion and sedimentation associated with Program Renewal activities.
- **BMP GEN-29: On-Site Hazardous Materials Management** would require proper management of hazardous materials used during Program Renewal activities; in particular, hazardous materials and wastes would need to be stored in watertight containers and with appropriate secondary containment. Generators and other equipment with potential to leak or spill fuels and lubricants would need to be stored and operated with secondary containment, and other measures to prevent release of hazardous materials/wastes would be implemented.
- **BMP GEN-30: Existing Hazardous Materials** would require that if hazardous materials are found, they would be carefully removed and disposed of according to applicable regulatory requirements, and that Valley Water staff wear proper protective gear and store the materials in an appropriate hazardous waste container until the materials can be properly disposed of at hazardous waste facility.
- **BMP GEN-31: Paving and Asphalt Work** would require that Valley Water avoid paving and seal coating in wet weather or when rain is forecasted, so as to prevent uncured materials from contacting stormwater runoff. BMP GEN-30 also includes other measures to prevent pollution of stormwater due to contact with fresh asphalt and concrete, and would minimize potential water quality impacts associated with this type of work under the Program Renewal.
- **BMP GEN-32: Painting and Paint Removal** prohibits cleaning brushes or rinsing paint containers into a street, gutter, storm drain, or stream, and also includes measures for managing and disposing of paint chips and residue. BMP GEN-32 would limit water quality impacts from this type of work.
- **BMP GEN-33: Spill Prevention and Response** would implement measures to prevent the accidental release of hazardous materials (e.g., chemicals, fuels, lubricants), and require that materials for cleanup of spills are available on site. BMP GEN-33 also specifies protocols for spill response and reporting. These measures and protocols

would ensure that any spills of hazardous materials associated with Program Renewal activities are minimized, as feasible.

- **BMP GEN-34: Existing Hazardous Sites** would require that Valley Water conduct a search for known contaminated sites upon selection of Program Renewal maintenance site locations using the SWRCB's GeoTracker database. For any ground-disturbing maintenance activities within 1,500 feet of "open" sites, Valley Water would work with the RWQCB case manager to ensure proposed activities do not affect cleanup or monitoring activities or threaten the public or environment.
- **BMP GEN-37: Vehicle and Equipment Maintenance** requires that vehicles and equipment used in Program Renewal activities be kept clean without excessive build-up of oil and grease, and that equipment used in the creek channel be inspected for leaks each day prior to initiation of work. Additionally, BMP GEN-37 requires that equipment servicing and repairs be performed in a location away from the creek channel or where pollutants could be released to surface waters.
- **BMP GEN-39: Vehicle and Equipment Fueling** would prohibit fueling of vehicles and equipment in the channel or immediate floodplain unless the relevant equipment cannot be relocated. Designated fueling locations should be specified (away from waters) and secondary containment must be provided. These requirements would minimize potential for accidental releases of fuel to water bodies during Program Renewal activities.
- **BMP GEN-40: Diversion and/or Dewatering for Non-Tidal Sites** requires that water be diverted around the work area via a temporary dam and/or bypass for work within non-tidal streams and channels. Measures would be prescribed to avoid and minimize impacts to water quality from dewatering, such as protecting flows from maintenance activity-related pollutants (e.g., soils, equipment lubricants, or fuels) and using filtration devices or settling basins, as appropriate, to minimize turbidity effects.
- **BMP GEN-41: Diversion and/or Dewatering in Tidal Work Areas** prescribes requirements for dewatering work sites in tidal areas. If cofferdam bypass pipes are to be used, water discharged from such pipes would be required not to exceed 50 NTUs above background levels.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** requires that pumps and generators used during dewatering operations be maintained and operated in a manner that minimizes impacts to water quality (e.g., generators to be stored or operated with secondary containment). This requirement would further minimize any potential impacts associated with dewatering during Program Renewal activities.
- **BMP SED-1: Groundwater Management** would require that encountered groundwater be pumped out of work sites (unless the work activity is not causing water quality degradation in a live stream), and that water quality monitoring be conducted. Excess sediment would be removed from extracted water prior to the water re-entering a creek.
- **BMP SED-4: Berm Bypass** would require that where sediment removal is accomplished without a bypass by removing alternating cells, the berm between the work and the live channel is wide enough to prevent introduction of turbid water into the live channel.

- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** would prevent downstream erosion impacts due to bank stabilization and provide protection to vulnerable areas within the reach of the worksite.
- **BMP BANK-2: Concrete Use Near Waterways** would require that fresh concrete be isolated until it no longer poses a threat to water quality, by using various measures (e.g., wet-sacked concrete and poured concrete to be excluded from the wetted channel for 30 days; dry-sacked concrete prohibited from use in the channel; designated location for cleaning out concrete transit vehicles; adequately sized temporary concrete washout facilities, and prohibiting slurry wastes from entering storm drains or watercourses).
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** would minimize any long-term erosion by leaving vegetation at the toe of the bank to the extent possible.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation to reduce impacts to the streambed.
- **BMP REVEG-1: Seeding** would require that sites where maintenance activities result in exposed soil be stabilized to prevent erosion; specifically, through seeding with native seed after maintenance activities are complete.
- **BMP ANI-5: Slurry Mixture near Waterways** would require that slurry-type mixes used to fill rodent burrows be prevented from entering waterways through use of appropriate erosion control methods and complying with manufacturer's specifications.

Conclusion

Given implementation of applicable BMPs, VHP conditions, compliance with existing permits, laws, and regulations, and mitigation measures the Program Renewal would not substantially conflict with or obstruct implementation of the San Francisco Bay or Central Coast Basin Plans. Impacts on habitat-related beneficial uses in applicable streams could be significant pre-mitigation, but implementation of Mitigation Measures BIO-3, BIO-4, and BIO-5 would ensure these beneficial uses would not be substantially adversely affected. Therefore, the impact would be **less than significant with mitigation.**

> **Mitigation Measure BIO-3: Augmentation of Spawning Gravel** (see description in Impact BIO-1 in Section 3.4, "Biological Resources")
>
> **Mitigation Measure BIO-4: Augmentation of Instream Complexity** (see description in Impact BIO-1 in Section 3.4, "Biological Resources")
>
> **Mitigation Measure BIO-5: Salmonid Habitat Restoration Projects** (see description in Impact BIO-1 in Section 3.4, "Biological Resources")

3.15 Wildfire

3.15.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program (SMP) Renewal related to wildfire. Data resources used in the preparation of this section included the California Department of Forestry and Fire Protection's (CAL FIRE's) fire hazard maps (CAL FIRE 2024), and information on wildland-urban interfaces within the SMP Program Renewal Area (Santa Clara County Firesafe Council 2024).

3.15.2 Regulatory Setting

The following subsections discuss federal, state, and regional laws and regulations that pertain to wildfire for the Program Renewal. Applicable local plans, policies, and regulations related to wildfire are presented in **Appendix C**, *General Plan Policies and Ordinances*. In summary, Appendix C details various plans throughout the County and local jurisdictions that encompass programs, strategies, policies, and goals for effectively managing wildfire risk. These policies are designed to increase public education about factors that increase the likelihood of wildfires, reduce overall wildfire risk, promote equitable access to essential resources during wildfire events, and enhance overall preparedness for wildfire emergencies.

Federal Plans, Policies, Regulations, and Laws

No federal plans, policies, regulations, or laws related to wildfire are applicable to the Program Renewal.

State Plans, Policies, Regulations, and Laws

California Fire Code

The California Fire Code (CFC) Title 24, Part 9 contains regulations consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of fire and explosion, dangerous conditions arising from the storage, handling, and use of hazardous materials and devices, and hazardous conditions in the use or occupancy of buildings or premises. The CFC also contains provisions to assist emergency response personnel.

2024 Strategic Fire Plan for California

The Strategic Fire Plan, developed by the State Board of Forestry and Fire Protection (2024), provides direction and guidance to CAL FIRE and its 21 field units. The 2024 Strategic Fire Plan sets forth several goals focused on fire prevention, natural resource management, and fire suppression efforts, and are summarized here:

a. Identify core capabilities and strengthen operational capacity;

b. Apply emerging technology to strengthen core operations;

c. Develop and complete a comprehensive assessment of fire protection capabilities, wildfire response standards, and values at risk to confirm the future placement of fire protection resources;

d. Expand natural resource management and fire prevention operations to meet the state's wildfire and forest resilience goals and changing policy and legal mandates;

e. Increase awareness and actions to improve fire resistance of man-made assets at risk and fire resilience of wildland environments through natural resource management;

f. Integrate implementation of fire and vegetative fuels management practices consistent with the priorities of landowners or managers;

g. Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression, and related services; and

h. Implement needed assessments and actions for post-fire protection and recovery.

California Public Resources Code

The Public Resources Code (Pub. Res. Code) includes fire safety regulations restricting the use of certain equipment that could produce sparks or flames and specifies requirements for the safe use of gasoline-powered tools in fire hazard areas. Valley Water staff and contractors must comply with the following requirements in the Public Resources Code:

a. Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Pub. Res. Code Section 4442).

b. Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (Pub. Res. Code Section 4428).

c. On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire-suppression equipment (Pub. Res. Code Section 4427).

d. On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (Pub. Res. Code Section 4431).

Pub. Res. Code Sections 4125-4137 (Responsibility for Fire Protection) requires the State Board of Forestry and Fire Protection to classify all State lands for the purpose of determining areas in which the financial responsibility of preventing and suppressing fires is primarily the responsibility of the State, or State Responsibility Areas (SRAs), and therefore under the jurisdiction of CAL FIRE. All State lands that are not classified as an SRA are considered to be the responsibility of local or federal agencies and are considered Local Responsibility Areas (LRAs).

Pub. Res. Code Sections 4201-4204 (Fire Hazard Severity Zones) directs CAL FIRE to map and periodically review Fire Hazard Severity Zones (FHSZs) within SRAs, based on determining factors such as fuel loading, slope, and fire weather and winds. These FHSZs are the basis for identifying requirements for fire protection found in other regulations such as the CFC.

Defensible Space for Fire Protection

State of California regulations regarding defensible-space requirements are contained in Pub. Res. Code Section 4291 and Government Code Section 51182. Pub. Res. Code Section 4291 primarily directs the creation of defensible space in SRAs, while California Government Code Section 51182 sets the fuel treatment requirements in LRAs that are designated as very high fire hazard severity zones. Both codes generally include a requirement to maintain defensible space of 100 feet from each side and from the front and rear of structures, but not beyond the property line except under specific circumstances.

Regional Laws, Regulations, and Policies

Bay Area Air District Open Burn Permits

As described in Section 3.3, "Air Quality," the Bay Area Air District regulates air quality in the San Francisco Bay Area Basin (SFBAAB), which includes Santa Clara County. Projects located within the SFBAAB are therefore subject to Bay Area Air District's rules and regulations. The Bay Area Air District oversees open burning regulations for the nine-county Bay Area region, including Santa Clara County. While most types of open burning are prohibited in the Bay Area, certain exceptions are made, primarily for agricultural or natural resource management purposes.

Open burning is only permitted under favorable weather conditions that allow for smoke dispersion and when air pollution levels are not expected to be high. Many types of burning are restricted to specific times of the year. Types of relevant prescribed burning activities and their designated burn seasons include:

- Marsh Management Fires (March 1 through April 15, and September 1 through October 15)
- Flood Debris Fires (October 1 through May 31)
- Forest Management Fires (November 1 through April 30)

Furthermore, the Bay Area Air District designates each day as either a "Burn" or "No Burn" day based on air quality forecasts. Approved fires may only occur during their designated burn season on a declared "Burn" day. "Burn" days are not allowed when a Spare the Air Alert is in effect. The Bay Area Air District's *Open Burn Status* web page has daily updates on "Burn" vs. "NO Burn" days (BAAQMD[1] 2020). Anyone planning to burn must also consult with their local fire agencies and CAL FIRE to confirm local permitting and fire safety requirements.

Santa Clara County Emergency Operations Plan (2022)

[1] The Bay Area Air District was formerly named the Bay Area Air Quality Management District (BAAQMD); the rebranding occurred in 2025. The Bay Area Air District documents that were prepared prior to 2025 and referenced in this EIR will be cited as BAAQMD.

The Santa Clara County Emergency Operations Plan (EOP) is a comprehensive document designed to support preparation and response for emergencies within Santa Clara County. The EOP establishes an incident management organization to coordinate support for on-scene responses and maintain situational awareness and covers various emergencies, including natural disasters, public health crises, and other incidents requiring coordinated response efforts. The Key components include a standardized approach to command, control, and coordination of emergency response, and annexes for public information, mass care and shelter, evacuation, debris management, and more (Santa Clara County Office of Emergency Management 2022).

Santa Clara County Wildfire Annex (2019)

The Santa Clara County Wildfire Annex focuses specifically on preparing for and responding to wildfires and includes strategies for reducing wildfire risks, such as vegetation management and public education campaigns. It also features detailed response procedures, including evacuation plans, firefighting strategies, and resource allocation, as well as steps for post-fire recovery, including damage assessment, debris removal, and community support (Santa Clara County Office of Emergency Management 2019).

3.15.3 Environmental Setting

Wildfire Hazard and Occurrence in the Program Renewal Area

Wildfire Hazard Severity Zones

Many areas within the Program Renewal Area are located within a wildland-urban interface (WUI). A WUI is a designated geographic region recognized by the State as an FHSZ or a similar area identified by the enforcing agency (Santa Clara County) as being at high risk of wildfires. Incorporated areas within a WUI include parts of Cupertino, Gilroy, Los Altos, Milpitas, Monte Sereno, Morgan Hill, Palo Alto, San Jose, Saratoga, Los Altos Hills, and Los Gatos (Santa Clara County Firesafe Council 2024).

Some of the Program Renewal Area is categorized as being in either a very high fire hazard severity zone, or a high fire hazard severity zone (Santa Clara County Firesafe Council 2024). Within the southwest and northeastern-most portions of the Program Renewal Area, there are LRAs that are classified as very high fire hazard severity zones. Specifically, areas with high and very high severity ratings stretch from north of Saratoga to south of Gilroy on the southwest side of the Program Renewal Area, and northeast of San Jose to southeast of San Martin on the western-most side of the Program Renewal Area. Within Santa Clara County, SRAs include the Diablo Range and the Santa Cruz Mountains, whereas LRAs are situated in the lower elevations and more developed regions. **Figure 3.15-1** illustrates the extent of the high and very high FHSZs within the Program Renewal Area.

Topography and Wind Patterns

The fire season in the Program Renewal Area typically runs from late summer through fall, during which conditions are driest and temperatures are highest. In Santa Clara County, fire hazards are shaped by both the landscape and wind patterns. The Santa Clara Valley's topography leads to prevailing winds that generally move along the Valley's northwest-southeast axis. Figure 3.15-1 indicates that the wildfire threat is most severe at higher elevations and less significant at lower elevations across the county (CAL FIRE 2024).

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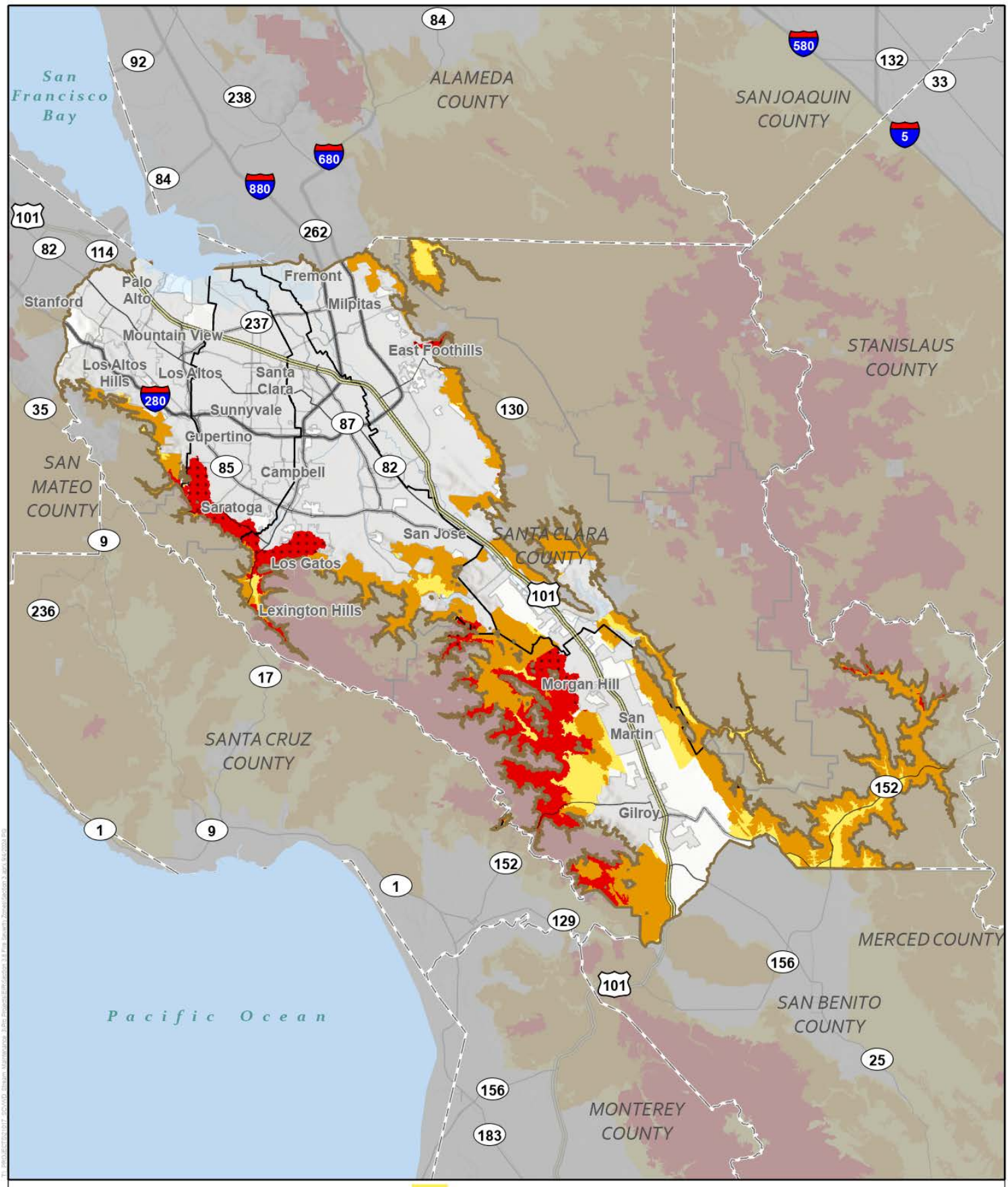

Figure 3.15-1
Fire Hazard Severity Zones in Local and State Responsibility Areas

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

History of Wildfires in Santa Clara County

Santa Clara County has a long history of wildfires, influenced by its varied terrain and climate. In recent years, the frequency and intensity of these fires have increased due to expanding urban development in vulnerable areas and shifts in climate patterns. Major incidents, such as the SCU Lightning Complex fire in 2020 which burned more than 390,000 acres throughout the County of Santa Clara and surrounding area, have substantially affected both natural landscapes and urban areas (U.S. Environmental Protection Agency 2021). These events have led to more rigorous fire management strategies and increased focus on preparedness, response, and mitigation to safeguard communities and protect natural resources.

Unhoused Fire Risk in Santa Clara County

The amount of unhoused in Santa Clara County has risen by approximately 5 percent from 2023 to 2024 (NBC Bay Area 2025). As unhoused encampments expand, the risk of fires increases, often ignited by activities that involve the use of outdoor fire for cooking or warmth. In San Jose, there were over 4,231 encampment non-structure fires reported during 2024, which is more than ten times the number of residential fires reported in San Jose during this time (San Jose Spotlight 2025). In recent years, the most significant wildfire on lands managed by the Stream Maintenance Program occurred along the section of Coyote Creek between Montague Expressway and Tasman Avenue. This area, a stretch of riparian woodland within San Jose's urban core, is severely affected by encampments. The fires, which are believed to have been caused by arson, burned at least 30 acres in 2021 and 2022 (Lewis, pers. comm. 2024). Fire departments, Valley Water, and local nonprofits are working to decrease the number of unhoused, as well as educate unhoused residents about fire safety.

Values at Risk

The values at risk of wildfire include communities, structures, critical facilities, as well as rare/native plants and animals. While many fires on natural lands can be beneficial to the ecosystem, wildfires in the context of this analysis generally refer to unwanted fires that can cause damage to values at risk.

Emergency Response and Evacuation Routes

Several main highways run through the Program Renewal Area that serve as both key evacuation and emergency access routes in times of emergency. Although evacuation routes are not specifically identified in the Santa Clara County General Plan (1994), the Multijurisdictional Hazard Mitigation Plan (MJHMP) and the Safety Element of the General Plan are being updated concurrently and these updates will include an evacuation assessment (Santa Clara County 2024a). The current MJHMP (Santa Clara County 2024b) and Safety and Noise General Plan element (Santa Clara County 1994) also establish policies and procedures to ensure the effective management of emergency operations and preparedness within Santa Clara County . In general, major arterials (such as El Camino Real, Lawrence Expressway, and Capitol Expressway), would serve as evacuation routes through the County and major highways providing regional access, such as U.S. 101, I-280, SR-87, and SR-17, also would be used in the event of a large-scale evacuation.

U.S. Highway 101, running north-south, provides a primary evacuation and emergency access corridor stretching from the southern city of Gilroy to the northern edge near Menlo Park. Interstate 280, also running north-south, offers an alternative route that winds through the

western part of the county, which would allow evacuees and emergency responders to avoid congested areas, access safety, and provide emergency services more efficiently. Additionally, State Route 87, which runs through downtown San Jose, acts as an evacuation and emergency access route out of the more densely populated regions within the County. State Route 17, which also runs north-south, connects the cities of San Jose and Los Gatos before continuing south through the Santa Cruz Mountains toward Santa Cruz. Lastly, Interstate 880, runs through the northern part of Santa Clara County, connecting San José, Milpitas, and the East Bay, serving as a key corridor for emergency access and evacuation between I-280, U.S. 101, and the Bay Area's freeway network.

3.15.4 Impact Analysis

Methodology

The analysis used a qualitative approach to assess the potential for the Program Renewal activities to increase the risk of wildfire and expose people or structures to wildfire risks. These risks were identified and evaluated as temporary, short-term impacts; no long-term impacts of the Program Renewal on wildfire were identified.

The impact analysis baseline is based on the existing conditions at the time of the May 2022 Notice of Preparation and evaluates impacts from the maintenance activities implemented for the existing Program (SMP-2) and the new activities proposed for the Program Renewal. The assessment and significant determinations were guided by the significance criteria provided in the California Environmental Quality Act (CEQA) Guidelines Section 15121(a), which are provided below. The analysis considered the implementation of applicable best management practices (BMPs) and adherence to existing laws and regulations. Where appropriate and feasible, mitigation measures were identified to reduce potential impacts.

Criteria for Determining Significance

Consistent with Appendix G of the CEQA Guidelines, for the purposes of this analysis, if located in or near SRAs or lands classified as very high FHSZs, the Program would result in a significant impact on wildfire if it would:

A. Substantially impair an adopted emergency response plan or emergency evacuation plan;

B. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose people or structures to a significant risk of loss, injury, or death; or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;

C. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or

D. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Environmental Impacts

Impact WF-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan (Less than Significant)

This impact analysis discusses Program Renewal impacts on emergency response and evacuation generally and is not limited to adopted emergency response or evacuation plans. As described in Section 3.12, "Transportation and Traffic," and Section 3.8, "Hazards and Hazardous Materials," Program Renewal activities that involve the operation of heavy equipment on roadways could potentially interfere with traffic movement and impair evacuation procedures and emergency response in the event of an emergency, such as a wildfire. Such activities include sediment and debris removal, fallen and hazardous tree removal, bank stabilization, vegetation management (e.g. mowing), and the management of animal conflicts. Temporary road or lane closures, as well as traffic associated with the Program Renewal, could also affect emergency response or evacuation operations. Program Renewal activities could require the use and/or temporary storage of heavy equipment, vehicles, sediments, and other materials near or on the work site which may require temporary road or lane closures. Temporary road closures may interfere with traffic movement and impair emergency response or evacuation procedures in the event of an emergency. In addition, increased traffic generated by Program Renewal activities from workers traveling to and from the work site may also interfere with emergency response and evacuation efforts (see Section 3.12, "Transportation and Traffic" for more discussion on transportation-related impacts). To the extent feasible, work would be staged and conducted to maintain two-way traffic flow on public roadways in the vicinity of work sites.

As described above, major arterials would serve as evacuation routes through the County as well as major highways (e.g., U.S. 101, I-280, I-880, and SR-17) in the event of a large-scale evacuation. Thus, these roads could be impacted if Valley Water activities required temporary lane or road closures during maintenance activities.

Implementation of BMPs, summarized below, would minimize impacts on emergency access and evacuation during maintenance work. Valley Water would be required to notify the public about maintenance work which would help to reduce the amount of people on public roadways and improve emergency response times. Additional public safety measures would be implemented, such as signage and temporary fencing, to warn the public about the maintenance work. If temporary lane closures are necessary or traffic flow is going to be affected, Valley Water would also coordinate with emergency service providers in areas where maintenance activities may affect traffic flow to ensure that emergency vehicle access and response times will not be impeded.

Applicable Best Management Practices

The BMPs summarized below would be implemented to minimize impacts to emergency response and emergency evacuation procedures as a result of implementation of the Program Renewal. A full description of each BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-43: Public Outreach** will ensure that the public is informed about maintenance work. Valley water will distribute notices and post signs in neighborhoods, provide notification to local governments (including local fire districts), and post information on Valley Water's website.

- **BMP GEN-44: Implement Public Safety Measures** will ensure that signage and/or temporary fencing are installed to help reduce impediments to traffic movement or evacuation routes in the case of an emergency, like a wildfire.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measure** will ensure that traffic flow is maintained. If temporary lane closures are necessary or traffic flow is going to be affected, Valley Water will coordinate with the local emergency service providers to ensure that there is emergency vehicle access and that response times are not impeded.

Conclusion

With implementation of the BMPs described above, impacts to emergency response and emergency evacuation procedures, including adopted emergency response and evacuation plans, would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact WF-2: Exacerbate Wildfire Risks and Thereby Expose People or Structures to a Significant Risk of Loss, Injury, or Death; or Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire (Less than Significant)

Proposed maintenance activities involving operation of vehicles and internal combustion engine equipment in dryland areas (e.g., high or very high FHSZs) could increase risk of accidental ignition of a wildfire that could potentially expose occupants/people and structures to significant wildfire-related risks. In particular, mowing activities could increase potential for igniting a brush fire. To minimize fire risk, Valley Water would comply with the applicable Fire Code and Pub. Res. Code sections listed above (Pub. Res. Code Sections 4442, 4427, 4428, and 4431) which minimize the potential of igniting a wildfire during Program Renewal maintenance activities by: requiring the presence of spark arrestors; requiring that fire suppression equipment be on-site from April 1 to December 1; ensuring that flammable materials are cleared at least 10 feet from equipment that may produce sparks or flames on days requiring a burning permit; and mandating that gasoline-powered tools must not be used within 25 feet of flammable materials on days when a burning permit is required.

To further reduce wildfire risks, Valley Water would also implement BMP GEN-35, which would involve installing spark arrestors on all equipment with internal combustion engines, restricting activities on high fire danger days, and requiring on-site fire suppression equipment. Spark arrestors would help prevent fires by reducing the likelihood of sparks from engine equipment igniting dry vegetation. Restricting work during high fire danger periods would minimize the risk of ignition caused by exhaust systems or metal contact from both equipment and on-road vehicles, particularly in dry, grassy areas with low humidity and high temperatures. Additionally, having fire suppression tools such as fire extinguishers, water tanks, or fire retardants readily available would help contain and prevent the spread of any accidental fires.

Applicable Best Management Practices

Valley Water would implement the following BMP as part of the Program Renewal to prevent maintenance activities from exacerbating wildfire risk and exposing people and structures to

pollutant concentrations from a wildfire. A full description of the BMP is provided in Chapter 2, *Project Description*.

- **BMP GEN-35: Fire Prevention** would ensure that earth-moving and portable equipment contain spark arrestors, and work crews are equipped with the appropriate fire suppression equipment during the high fire danger period. Flammable materials would be kept away from equipment that could produce a spark, fire, or flame and also from portable power tools that would be powered by gasoline-fueled internal combustion engines.

Conclusion

Implementation of relevant regulatory requirements and the BMP described above would minimize risks of igniting a wildfire during maintenance activities. As such, Program Renewal activities would not substantially exacerbate wildfire fire risks, and thereby expose people or structures to a significant risk of loss, injury, or death, or expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The Program Renewal would also not include construction of any new housing or building which could potentially expose occupants to wildfire-related risks (e.g., pollutant concentrations). Over the long term, the Program Renewal would reduce the risk of wildfire through vegetation maintenance activities (i.e., removal of flammable invasive species and mowing) conducted along Valley Water channel access roads and facilities. Therefore, this impact would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact WF-3: Require the Installation or Maintenance of Infrastructure that may Exacerbate Fire Risk or Result in Temporary or Ongoing Impacts to the Environment (Less than Significant)

The Program Renewal would not require the installation of any new infrastructure but would require the maintenance of existing infrastructure such as flood protection channels. However, several of the maintenance activities (e.g., vegetation management) would serve the purpose of reducing fire fuel loads and maintaining access to Valley Water facilities in the longer term. As discussed in Impact WF-2, certain maintenance activities, such as vegetation maintenance, could increase local fire risk or potentially provide an ignition source to flammable environments. However, the potential for significant impacts would be reduced through compliance with applicable regulatory requirements and implementation of BMPs.

Applicable Best Management Practices

To minimize the potential for increased local fire risk due to maintenance activities of the Program Renewal, Valley Water would implement the following BMP as part of the maintenance activities. A full description of this BMP is provided in Chapter 2, *Project Description.*

- **BMP GEN-35: Fire Prevention** would ensure that all earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. Work crews will have appropriate fire suppression equipment available, and flammable materials will be kept away from equipment that could produce a spark, fire, or flame.

Conclusion

With the implementation of relevant regulatory requirements and the BMP described above, potential impacts from increased local fire risk as a result of Program Renewal maintenance activities would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact WF-4: Expose People or Structures to Significant Risks, Including Downslope or Downstream Flooding or Landslides, as a Result of Runoff, Post-Fire Slope Instability, or Drainage Changes (Less than Significant)

As described in Chapter 2, *Project Description*, the Program Renewal aims to reduce flood risk, maintain the structural integrity of Valley Water facilities, enhance ecological function, and ensure public safety. To reduce flood risk, the Program Renewal includes activities such as removing accumulated sediment, vegetation, and debris to restore channel capacity. Over time, these efforts would lower the risk of flooding and landslides, including those associated with wildfire events near the Program Renewal Area.

As stated in Impact WF-2, certain maintenance activities, like vegetation management, may temporarily increase fire risks or create potential ignition sources in flammable environments. However, these risks would be minimized through adherence to regulatory requirements and the implementation of BMP GEN 35, which would require fire suppression equipment on site, mandate that equipment with internal combustion engines have spark arrestors, and limit activities on high fire danger days. In the long term, associated activities would decrease the potential for wildfire ignition in the area by removing fuels, thus, decreasing the likelihood that people or structures would be exposed to significant hazards, such as flooding, or landslides caused by runoff, post-fire slope instability, or drainage changes.

Conclusion

With the implementation of relevant regulatory requirements and BMP GEN-35, potential impacts from downstream flooding or landslides because of Program Renewal maintenance activities would be **less than significant**, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Chapter 4.
Other Statutory Considerations

This chapter describes the irreversible impacts, significant and unavoidable impacts, growth-inducing impacts, and cumulative impacts of the Program Renewal as required by the CEQA Guidelines.

4.1. Irreversible Impacts

CEQA Guidelines Section 15126.2(d) requires that an environmental impact report (EIR) must identify any irreversible impacts, also referred to as irreversible environmental changes that may be caused by a proposed project, including current or future commitments to using non-renewable resources, secondary impacts, or growth-inducing impacts that commit future generations to similar uses. Section 15126(d) of the CEQA Guidelines states that significant, irreversible environmental changes associated with a proposed project may include:

- uses of non-renewable resources during the initial and continued phases of the project which may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely;
- primary impacts and, particularly, secondary impacts (such as highway improvement that provides access to a previously inaccessible area) that commit future generations to similar uses; and
- irreversible damage, which may result from environmental accidents associated with the project.

An irretrievable commitment of nonrenewable resources would not occur as a result of the Program Renewal. Implementation of the Program Renewal would involve maintenance activities requiring the temporary use of heavy equipment, which would require the use of fossil fuels, and permanent use of raw materials, including nonrenewable resources. Future use of such resources would not be compulsory if alternative means of flood protection were implemented to alleviate the need for the Program Renewal. The practices under the Program Renewal should reduce the need for maintenance over time. In addition, the Program Renewal is not anticipated to have secondary impacts that would commit future generations to similar uses or result in irreversible damage.

4.2. Significant and Unavoidable Impacts

CEQA Guidelines Section 15126.2(c) further requires an EIR to describe any significant impacts that cannot be mitigated to a level of insignificance. All of the impacts associated with the Program Renewal would either be maintained to a less-than-significant level assuming implementation of identified BMPs (described in Chapter 2, *Project Description*), or reduced to a less-than-significant level by mitigation measures, with the exception of the impacts discussed below.

The following impacts have been identified as significant and unavoidable. Refer to the impact analysis sections in Chapter 3, *Environmental Setting and Impact Analysis*, and cumulative impact analysis in Section 4.5 below for a full description of significant and unavoidable impacts.

Impact BIO-4B: Interference with the use of native wildlife nursery sites

Impact NZ-1: Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of the Proposed Maintenance Areas in Excess of City or County Standards or Generate a Substantial Incremental Increase in Noise Levels

Impact NZ-2: Generate Excessive Ground Vibration or Ground-borne Noise Levels

Cumulative Impact BIO-4: Cumulative Impacts on Movement of Any Native Resident or Migratory Species or Established Wildlife Corridors, or on Use of Native Wildlife Nursery Sites

Cumulative Impact NZ-1: Cumulative Impacts from Substantial Temporary or Permanent Increase in Ambient Noise Levels or Substantial Incremental Increase in Noise Levels

Cumulative Impact NZ-2: Cumulative Impacts from Ground Vibration or Ground-borne Noise Levels

4.3. Growth-Inducing Impacts

Section 15126.2(e) of the CEQA Guidelines requires an EIR to include a detailed statement of a project's anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a project could foster economic or population growth or the construction of additional housing in the project area. The analysis also must address project-related actions that, either individually or cumulatively, would remove existing obstacles to population growth. A project would be considered growth inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

The Program Renewal would not involve new development that could directly induce population growth, nor would it involve the extension of infrastructure that could indirectly induce population growth. The Program Renewal would not involve construction of new housing or create a demand for additional housing, such as through commercial development. Minimal additional staff are expected to be required to carry out the proposed maintenance activities under the Program Renewal. Furthermore, the Program Renewal on its own would not displace any existing housing units or persons. The proposed maintenance activities would be limited to Valley Water-owned lands, easements, or parcels approved for work activities by the Board of Directors. Furthermore, if Valley Water were to stop maintaining Program Renewal channels, this could result in increased flood risk, impeding potential future development in areas that currently are undeveloped and subject to such flooding. However, under baseline conditions, no known flooding issues are impeding development that would be resolved by maintenance activities conducted under the Program Renewal. As such, the Program Renewal is not anticipated to remove any obstacles to growth.

4.4. Cumulative Impact Analysis

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355[c]). Cumulative impacts reflect "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (CEQA Guidelines Section 15355[b])

Under CEQA, an EIR must discuss the cumulative impacts of a project when the project's incremental contribution to the group effect is "cumulatively considerable." An EIR does not need to discuss cumulative impacts that do not result in part from the project evaluated in the EIR. The CEQA Guidelines (Section 15130[a]) require that an EIR address the cumulative impacts of a Program Renewal when:

- the cumulative impacts are expected to be significant; and
- the project's contribution to the cumulative impact is expected to be cumulatively considerable, or significant in the context of the overall (cumulative) level of effect.

To meet the adequacy standard established by Section 15130 of the CEQA Guidelines, an analysis of cumulative impacts must contain the following elements:

A. an analysis of related future projects or planned development that would affect resources in the project area, similar to those affected by the project;

B. a summary of the environmental effects expected to result from those projects, with specific reference to additional information, stating where that information is available;

C. a reasonable analysis of the combined (cumulative) impacts of the relevant projects; and

D. an evaluation of a project's potential to contribute to the significant cumulative impacts identified, and a discussion of feasible options for mitigating or avoiding any contributions assessed as cumulatively considerable.

The discussion of cumulative impacts is not required to provide as much detail as the discussion of the effects attributable to the project alone. Rather, the level of detail needs to be guided by what is practical and reasonable. In addition, Section 15130(e) of the CEQA Guidelines directs that if a cumulative impact is adequately addressed in a prior EIR for a general plan, and the project is consistent with that general plan, the project EIR need not further analyze that cumulative impact.

Lead agencies may use a "list" approach to identify related projects or may base the identification of cumulative impacts on a summary of projections in an adopted general plan or related planning document (CEQA Guidelines Section 15130[b]), the "projection" approach.

4.4.1. Methods Used in this Analysis

The cumulative impact analysis utilizes a hybrid (combined list/projection) approach based on growth projections for each jurisdiction within Valley Water's service area and Valley Water's 5-year capital improvement program (CIP) for fiscal years 2025–2029. Information on each jurisdiction's planning document is provided in Appendix C, *General Plan Policies and Ordinances.*

Table 4-1 provides an overview of the growth projections developed by the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) for the Plan Bay Area 2050 (MTC-ABAG 2021). These projections inform the analysis of cumulative impacts as, given the anticipated 73 percent growth in households and population within Santa Clara County, it is likely that development projects from one or more local jurisdictions would be taking place in the vicinity of and concurrently with Program Renewal activities.

Valley Water's 5-year capital improvement program (CIP) for fiscal years 2025–2029 includes numerous projects that would be implemented throughout Santa Clara County that could affect resources similar to those affected by the Program Renewal. **Table 4-2** lists those 5-year CIP projects (some of which have been completed) that could affect resources similar to the Program Renewal. Other operations and maintenance projects also would be conducted by Valley Water, such as canal operations, which could have similar effects.

The cumulative impact analysis in the following section provides an assessment as to whether the projections described above, along with the projects listed in Valley Water's CIP and other operations and maintenance projects, would result in significant cumulative impacts, and whether the Program Renewal would make a considerable contribution to those significant cumulative impacts. Some of the projects listed in Table 4-2 have been completed. Note that the CEQA Guidelines state that lead agencies "should define the geographic scope of the area affected by the cumulative effect" (Section 15130[b][3]). The geographic scope of the analysis in this document varies depending upon the particular resource topic. For instance, greenhouse gas emissions are considered at a global scale; air quality emissions are considered at the scale of the air basin; the scale of analysis for noise would be limited to those areas that could potentially be affected by Program Renewal-related noise.

Table 4-1. Projected Santa Clara County Household and Housing Growth, 2015–2050

Super-district No. – Name	Primary Jurisdictions Included in Superdistrict	Estimated Households, 2015	Estimated Population, 2015*	Projected Households, 2050	Projected Population, 2050*	Projected Population/ Household Growth, 2015-2050 (%)	Estimated Jobs, 2015	Projected Jobs, 2050	Projected Job Growth, 2015-2050 (%)
8 – Northwest Santa Clara County	Los Altos Hills, Los Altos, Palo Alto (partial), Mountain View (partial)	74,000	213,120	102,000	293,760	+38	180,00	207,000	+15
9 – North Santa Clara County	Sunnyvale, Santa Clara (partial), Mountain View (partial), Milpitas (partial), San Jose (partial), Palo Alto (partial)	107,000	308,160	320,000	921,600	+199	370,000	629,000	+70
10 – West Santa Clara County	Los Gatos, Monte Sereno, Saratoga, Cupertino, Campbell (partial), Santa Clara (partial)	121,000	348,480	172,000	495,360	+42	145,000	197,000	+36
11 – Central Santa Clara County	Campbell (partial), San Jose (partial)	105,000	302,400	168,000	483,840	+60	178,000	263,000	+48
12 – East Santa Clara County	Milpitas (partial), San Jose (partial)	108,000	311,040	180,000	518,400	+67	121,000	170,000	+40
13 – Central South Santa Clara County	San Jose (partial)	73,000	210,240	91,000	262,080	+25	57,000	77,000	+36
14 – South Santa Clara County	Gilroy, Morgan Hill, San Jose (partial)	35,000	100,800	43,000	123,840	+24	49,000	68,000	+37
Total		***623,000***	***1,794,240***	***1,075,000***	***3,096,000***	***+73***	***1,099,000***	***1,610,000***	***+46***

*Population projections are based on assumption of 2.88 persons per household (calculated from MTC-ABAG 2021).

Source: MTC-ABAG 2021.

Table 4-2. Valley Water Fiscal Year 2025-2029 Capital Improvement Program and Activities

CIP Project	Activities that Could Potentially Affect Resources Similar to the Program Renewal
Water Supply	
Storage Facilities	
Almaden Dam Improvements	Modify and/or construct new intake structure and fix energy dissipation structure, piping and valves.
Almaden-Calero Canal Rehabilitation	Replace the entire terminal structure, and the canal liner. Replace existing siphon drains. Construct additional emergency overflow structures. Install buried elliptical pipe or box culvert.
Anderson Dam Seismic Retrofit (C1)	Replace the existing embankment dam, outlet works, and spillway. Restore lost reservoir storage capacity.
Anderson Dam Tunnel	Construction of an augment diversion system including a diversion tunnel, an outlet structure, a micro-tunnel lake tap, and modifications to Coyote Creek downstream of the base of the dam. Reservoir bank and rim stability improvements, and intake structure modification.
Coyote Creek Flood Management Measures	Planning, design and construction of improvements for approximately 4 miles of Coyote Creek.
Coyote Creek Chillers	In order to chill imported water from the Cross Valley Pipeline and deliver the chilled water to the Coyote Creek, installation of a Modular Chiller Plant at the existing Coyote Pumping Plant, with a new pipe, to allow the chillers to receive imported water.
Coyote Percolation Dam Replacement	Replace the existing dam with an inflatable bladder to raise and lower depending on flow level.
Cross Valley Pipeline Extension	Construction of a new pipeline from the Cross Valley Pipeline to Coyote Creek, an outfall, energy dissipator, and creek bank improvements.
Calero Dam Seismic Retrofit-Design & Construction	Improvements to the Dam to stabilize the embankment, potentially modify the outlet, and modify the spillway.
Calero and Guadalupe Dams Seismic Retrofits	Stabilize embankments. At Calero Dam: Modify/replace outlet works if needed, modify spillway, relocate Bailey Ranch structures, and breach Fellow's Dike. At Guadalupe Dam: Relocate intake structure out of upstream berm.
Coyote Pumping Plant ASD Replacement	Implement improvements to ASD including replacing outdated technology, upgrading circuit breakers, upgrading heating, ventilation, and air conditioning systems.

CIP Project	Activities that Could Potentially Affect Resources Similar to the Program Renewal
Coyote Warehouse	Construction of warehouse to store pipeline materials.
Dam Seismic Stability Evaluation	Preliminary planning/seismic stability evaluation for nine dams.
Small Capital Improvements, San Felipe Reach 1-3	Infrastructure improvement including tunnels, large diameter pipelines and valve structures, pumps and associated equipment.
Pacheco Reservoir Expansion (A1)	Construction and operation of a new Dam, conveyance facilities and related structures to expand the capacity of the existing reservoir.
Transmission Facilities	
10-Year Pipeline Rehabilitation	Inspection, planning, and design activities. Dewater and inspect pipelines and tunnels, renew pipe sections, valves and other components as needed, perform maintenance as needed. Install monitoring systems and develop an asset risk management system.
Almaden Valley Pipeline Replacement Project	Pipeline replacement.
Distribution System Master Plan Implementation	Development of master plan to optimize raw and treated water systems and develop a programmatic EIR.
FAHCE Implementation	Reservoir reoperations to support salmonid spawning, provisions for fish passage and aquatic habitat restoration. Manage fish habitat restoration in the Guadalupe River, Coyote Creek and Stevens Creek watersheds
IRP2 Additional Line Valves (A3)	Construct four additional line valves in the treated water distribution system.
Pacheco/Santa Clara Conduit Right of Way Acquisition	Acquire Right of Way along County pipeline routes.
SCADA Master Plan Implementation	Planning and design effort to coordinate replacement and upgrade of SCADA water monitoring and controlling system.
SMPIP Upgrades - Phase 1	Upgrades SCADA communications infrastructure. Implements backup control center capabilities
Small Capital Improvements, Raw Water Transmission	General system improvements such as fixing corrosion and replacing valves
Small Capital Improvements, Treated Water Transmission	General system improvements such as fixing corrosion and replacing valves
Treated Water Isolation Valves	Plans, designs, and constructs two additional line valve appurtenances.

CIP Project	Activities that Could Potentially Affect Resources Similar to the Program Renewal
Vasona Pump Station Upgrade	Replacement of pumps, motors, drives, valves, actuators, and electrical and control systems; and adding one redundant pump.
Water Treatment Plants (WTP)	
Penitencia WTP Residuals Management	Planning, designing, and construction of modifications to improve efficiency and reliability. Installation of new washwater clarification and residuals management facilities
Rinconada WTP Residuals Remediation	Planning, designing, and construction of modifications to improve efficiency and reliability.
Rinconada Ammonia Storage & Metering Facility Upgrade	Replace existing tank and metering pumps. Construct three new feed lines.
Rinconada WTP Reliability Improvement	Construct a new filter building Implement raw water ozonation Increase RWTP capacity.
Small Capital Improvements, Water Treatment	Small projects resulting repair and extending the life of Water Treatment Plants.
Santa Teresa WTP Filter Media Replacement Project	Improvements to existing filter basins.
WTP Electrical Improvement Project	Improvements to electrical systems.
WTP Master Plan Implementation	Planning and design effort to identify WTP infrastructure in need of repair.
Recycled Water Facilities	
San Jose Purified Water Project (SJPWP) - Phase 1	Prepare and evaluate possibility of Direct Potable Reuse (DPR) Project. Construction of Educational Center.
Land Rights - South County Recycled Water Pipeline	Acquire Land Rights along recycled water pipeline route.
South County Recycled Water Pipeline	Construct 18,500 feet of pipeline, and a 30-inch diameter pipeline.
Flood Protection	
Lower Peninsula Watershed	
Permanente Creek, San Francisco Bay to Foothill Expressway	Flood protection, reduce erosion and sedimentation, environmental restoration, and recreation enhancements. Work within streams.
Palo Alto Flood Basin Tide Gate Structure Replacement	Retrofit and rehabilitate, then replace the existing tide structure.
San Francisquito Creek, San Francisco Bay to Middlefield Road, Construction	Flood protection, reduce erosion and sedimentation, and environmental restoration. Work within streams.

CIP Project	Activities that Could Potentially Affect Resources Similar to the Program Renewal
West Valley Watershed	
Sunnyvale East and West Channels	Flood protection, recreation enhancements, reduce erosion and sedimentation, and improve water quality.
Guadalupe Watershed	
Guadalupe River, Tasman Dr. to I-880	Flood protection.
Guadalupe River-Upper, Interstate 280 to Blossom Hill Road	Flood protection, increase riparian forest acreage, improve wildlife habitat, access to upstream spawning and rearing habitat, and reduce bank erosion and sedimentation. Work within streams.
Coyote Watershed	
Berryessa Creek, Calaveras Boulevard to Interstate 680	Flood protection, mitigation of project impacts, improve stream habitat, and reduce sedimentation.
Berryessa Creek, Lower Penitencia Creek to Calaveras Boulevard	Flood protection and improve structural integrity of levees.
Coyote Creek, Montague Expressway to Tully Road	Flood protection, improve water quality, enhance stream habitat.
Lower Penitencia Creek Improvements, Berryessa Creek to Coyote Creek	General creek improvements.
Upper Penitencia Creek, Coyote Creek to Dorel Drive	Flood protection, improve stream habitat and fisheries, and reduce sedimentation.
South Babb Creek Flood Mitigation Project	Flood protection.
Uvas Llagas Watershed	
Llagas Creek–Lower, Capacity Restoration, Buena Vista Avenue to Pajaro River	Flood protection, environmental restoration.
Llagas Creek–Upper, Buena Vista Avenue to Llagas Road (Safe, Clean Water)	Flood protection.
Multiple Watersheds	
San Francisco Bay Shoreline (Safe, Clean Water)	Flood protection, enhanced habitat, provide recreation.
Small Capital Improvements, Watershed Asset Rehabilitation Program (WARP)	Flood protection, rehabilitate fish passage, remediate eroded earth slopes, channel and storm outfall restoration and repair.
Water Resources Stewardship	
Stevens Creek Fish Passage Enhancement	Improvements to the Moffett Boulevard fish ladder.

CIP Project	Activities that Could Potentially Affect Resources Similar to the Program Renewal
Hale Creek Enhancement Pilot Study (D6.1)	Flood protection, enhance habitat, replace concrete channel with vegetated channel.
Almaden Lake Improvements (D4.1)	Planning and design to separate Alamitos Creek from Almaden Lake.
Coyote Percolation Dam Fish Passage – Phase 2	Placeholder for future construction of possible habitat enhancement.
SCW Ogier Ponds Separation from Coyote Creek (D4.2	Partial construction to separate Coyote Creek from Ogier Ponds.
Bolsa Road Fish Passage Improvement (D6.2)	Removal of fish passage impediment.
Calabazas/San Tomas Aquino Creek-Marsh Connection (formerly named Salt Ponds A5-11 Restoration)	Connect Calabazas and San Tomas Creeks directly to Pond A8, flood protection, improve recreation, and reduce creek maintenance.
Pond A4 Resilient Habitat Restoration Project	Sediment re-use, create habitat, and flood resilience.
Safe, Clean Water Program Fish Passage Improvements (D4.3)	Construction of a passage project at the Evelyn Bridge.
SCW D4.3 Fish Passage Improvements (Moffett)	Removal of a fish passage impediment, improve habitat.
SCW Regnart Creek Rehabilitation (F8)	Repair incised banks and bed within this reach, establish a channel equilibrium to reduce future erosion.
Coyote 10B Freshwater Wetlands	Creation of freshwater wetland, upland habitat, and channel with fisheries habitat.

Source: Valley Water 2024

4.4.2. Cumulative Impact Analysis

Cumulative Impact AES-1: Cumulative Impacts on Aesthetics (Less than Significant with Mitigation)

The geographic scope of cumulative impacts related to aesthetics includes areas where the project is visible as determined by physical constraints of the environment and the psychological limits of human sight. These views/viewsheds generally include areas within and adjacent to the Program Renewal Area and within Santa Clara County. Cumulative aesthetic impacts could occur if: the anticipated level of development indicated in Table 4-1; and the past, present, and reasonably foreseeable probable future CIP projects identified in Table 4-2 would involve concurrent activities that would result in substantial adverse effects on a scenic vista; the project damages scenic resources; degrades the existing visual character or quality of public views of the project area; conflicts with applicable zoning and other regulations governing scenic quality; or creates substantial new light or glare in the area. These potential impacts could occur if cumulative projects include the construction of new facilities, removal of natural habitat, or other adverse changes that would affect the same scenic and visual resources as the Program Renewal.

Many of the development projects within Santa Clara County anticipated in Table 4-1 and the CIP projects listed in Table 4-2 would be implemented within the geographic scope of cumulative aesthetic impacts and within the same timeframe as the Program Renewal. Cumulative impacts to aesthetics could occur if the cumulative projects' construction schedules and/or operations overlap with those of the Program Renewal and are visible in the same viewsheds.

As described and analyzed in Section 3.2, "Aesthetics," the Program Renewal would result in no impacts from new sources of light and glare. Further, the Program Renewal would result in less-than-significant impacts to scenic vistas; would not degrade the visual quality and character of the area; and would not conflict with applicable zoning or other scenic regulations.

As described in Section 3.2, "Aesthetics," various scenic resources are designated or eligible for listing as scenic within the Program Renewal Area. One stretch of SR 9 within the Program Renewal Area is officially designated by Caltrans as a State Scenic Highway and portions of SR 9, SR 17, SR 35, SR 152, SR 156, and I 280 are eligible for listing as State Scenic Highways. Additionally, Santa Clara County has designated a number of roads within the Program Renewal area as scenic freeways, expressways, arterial, and rural routes. Maintenance activities, vegetation management activities, and tree removal would take place as part of the Program Renewal and could result in degradation of scenic resources such as views from recreational trails; changes in the visual condition of riparian areas; and removal of mature, healthy trees, which would be a significant impact. Implementation of the BMPs listed below would reduce the potential for aesthetic impacts during Program Renewal activities.

<u>Applicable Best Management Practices</u>

Valley Water would implement the following BMPs as part of the Program Renewal to reduce the potential for aesthetic impacts. A full description of the BMPs is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work areas, staging areas, and access routes are kept to the minimum area necessary to complete the maintenance work to minimize potential visual effects. As feasible, staging areas and access routes will be located within existing disturbed areas and along existing access roads.
- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize potential visual effects.
- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on existing habitat conditions due to staging and stockpiling materials, including erosion control measures during the wet season.
- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that channels will be graded so that they do not present a sudden vertical transition or other blockages that could erode when flows are restored and create significant visual changes in the channel.
- **BMP SED-3: Restore Channel Features** states that low-flow channels within nontidal streams will be contoured and restored to pre-construction conditions following construction.
- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of bank will be protected by leaving vegetation to minimize potential erosion and reduce potential visual effects associated with vegetation removal.
- **BMP REVEG-1: Seeding** will ensure that exposed soils are stabilized with native seed to prevent erosion and to minimize temporary visual effects associated with disturbed areas.
- **BMP REVEG-2: Planting Material** will ensure that revegetation and replacement plantings consist of locally collected materials. Selection of species to install in revegetation sites will reference natural areas along the same creek so that the work site has a similar ecological and visual setting to its surroundings.

Summary

Maintenance activities, vegetation management activities, and tree removal would take place as part of the Program Renewal and could result in degradation of scenic resources such as views from recreational trails; changes in the visual condition of riparian areas; and removal of mature, healthy trees, which would be a significant impact. The cumulative impact would also be significant when adding the effects of cumulative projects, and the Program Renewal's contribution to this impact would be cumulatively considerable. Mitigation Measure BIO-12, described below, would reduce the potential for substantial damage to publicly visible scenic resources to a less-than-significant level. With implementation of this mitigation measure, the Program Renewal would result in a less than cumulatively considerable incremental contribution to a significant cumulative impact related to aesthetics. Therefore, this cumulative impact would be less than significant with mitigation.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

Mitigation Measure BIO-12: Compensatory Mitigation for Impacts to Woody Riparian Vegetation. See Section 3.4, "Biological Resources," Impact BIO-2, for the full text of this mitigation measure.

Cumulative Impact AIR-1: Cumulative Air Quality Impacts (Less than Significant)

Maintenance activities for the Program Renewal would result in emissions of criteria air pollutants (e.g., particulate matter [PM10 and PM2.5]) and precursors (e.g., oxides of nitrogen [NO_X], reactive organic gases [ROG]) in Santa Clara County within the jurisdiction of the Bay Area Air District (formerly the Bay Area Air Quality Management District [BAAQMD]). Santa Clara County is currently in nonattainment for PM2.5 and ozone (California and national ambient air quality standard) and PM10 (California Ambient Air Quality Standards). The cumulative context and geographical setting were described previously in Section 3.3, "Air Quality," which considers the emissions of development projects within Santa Clara County anticipated in Table 4-1 and the CIP projects identified in Table 4-2, as well as others within the Bay Area Air District's jurisdiction.

As described in Section 3.3, "Air Quality," the Program Renewal would have less-than-significant impacts related to conflicts with or obstruction of applicable air quality plans; temporary increases in criteria air pollutants; exposure of sensitive receptors to substantial pollutant concentrations (diesel PM and pesticides); and creation of objectionable odors.

The Program Renewal is consistent with local general plan policies applicable to air quality. Many of these local general plans aim to reduce emissions of criteria pollutant and toxics by using efficient vehicles and equipment, as well as by managing fugitive dust emissions. Many of the general plans reference consistency with Bay Area Air District plans and policies for air quality, including the 2017 Bay Area Clean Air Plan (BAAQMD 2017a). The control measures identified in the 2017 Bay Area Clean Air Plan that are most applicable to the Program Renewal are associated with the energy and transportation sectors. The Program Renewal would comply with all applicable regulations to reduce energy consumption and reduce fossil fuel combustion. Currently, Valley Water's alternative fueled vehicles consist of 15 percent hybrid vehicles and 2 percent electric vehicles compared to the total vehicle fleet (Lewis, pers. comm., 2024). Therefore, the Program Renewal would include applicable control measures identified in the 2017 Bay Area Clean Air Plan and would support the primary goals of the 2017 Bay Area Clean Air Plan.

Conducting the Program Renewal maintenance activities would generate emissions of criteria air pollutants. In particular, soil disturbance would cause temporary emissions of particulate matter. Fuel combustion involved with operating heavy equipment and on-road vehicles used to dispose debris also would release particulate matter and other contaminants associated with motor vehicle operation, including carbon monoxide and ozone precursors (ROG and NOx). Finally, use of pesticides would result in emissions of ROG. Table 3.3-6 shows that annual emissions of criteria air pollutants from the Program Renewal would be below Bay Area Air District operational significance thresholds when compared to existing emissions.

Exhaust emissions from on- and off-road vehicles and equipment used for maintenance under the Program Renewal would generate diesel PM, which is a toxic air contaminant. These maintenance activities would be countywide, transitory (lasting from 1 day to several weeks), and intermittent; when they have ceased, associated diesel PM emissions will have ceased as well. California Air Resources Board's (CARB) ATCM measures that are applicable to the

Program Renewal would reduce exposure to toxic air contaminants (TACs). Health risk assessments for diesel PM are typically based on 9-, 40-, and 70-year exposure periods since they have chronic long-term health impacts, including cancer. Exposure to diesel exhaust, including for sensitive receptors, would be well below the exposure period of concern. For this reason, Bay Area Air District significance thresholds for TAC health risks are not used in this analysis.

The exposure to pesticide use is greatest during application that may cause acute short term health effects such as respiratory problems, watery eyes, and irritated skin. Prolonged use of pesticides may result in chronic long-term health impacts, including cancer. Existing pesticide regulations minimize the chances of acute exposure and limit the amount of long-term pesticide use in the environment.

Sediment removal is the only activity in the Program Renewal that has the potential to generate substantial objectionable odors. The potential concentrations of hydrogen sulfide gas released from sediment removal activities would not be substantial enough to adversely affect human health; however, they could cause annoyance by creating an objectionable odor in the vicinity of a specific maintenance/stockpile work site or reuse/disposal location. Conditions are anticipated to be substantively similar for the Program Renewal as they were for the existing Stream Maintenance Program (SMP-2). Any odors, should they occur, would be localized, short-term, and would not be anticipated to affect a substantial number of people.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce air pollutant emissions during the Program Renewal maintenance activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-2**: **Instream Herbicide Application** will ensure that proper protocols are followed for the application of instream herbicide. Herbicides will not be applied directly into the water, and the application of herbicides will not occur when wind speeds exceed 10 miles per hour, which will minimize the exposure of diesel PM and toxic air contaminants from toxic air pollutants and pesticide emissions. Restrictions will also be applied on herbicide ingredients that are subject to the special-status species injunctions.

- **BMP GEN-4**: **Minimize the Area of Disturbance** will ensure that the footprint of work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of fugitive dust and therefore reduce the amount of PM10 emissions.

- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize the amount of fugitive dust.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to keep spoils and chemicals in designated areas which will help to minimize fugitive dust and emissions from entering sensitive areas.

- **BMP GEN-36: Dust Management** will ensure that the Bay Area Air District's Basic Dust Control Measures are implemented.

- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that criteria air pollutant emissions are reduced.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

- **BMP HM-4: Posting and Notification for Pesticide Use** will provide notice of where pesticides will be used to minimize the exposure of toxic air pollutants to sensitive receptors.

Summary

The Program Renewal is consistent with regional and local air quality plans and policies; emissions of criteria air pollutants from the Program Renewal would be below Bay Area Air District significance thresholds; exposure of persons to diesel PM and pesticides concentrations would not be substantial; and objectionable odors would be localized, short term, and would not affect a substantial number of people. Implementation of the BMPs listed above would ensure that pollutant emissions do not exceed required thresholds. In addition, while not required as air quality mitigation, Mitigation Measure GHG-2, which establishes requirements for zero emission and hybrid equipment and newer trucks, would further reduce criteria pollutant emissions from equipment and trucks.

Cumulative impacts from criteria air pollutants and ozone precursors are accounted for in air quality plans and in the establishment of CEQA emissions thresholds; therefore, these impacts would not be significant when adding the effects of cumulative projects. The contribution of short-term minor emissions of criteria air pollutants would not result in a considerable contribution to a significant cumulative air quality impact. This cumulative impact is less than significant, and the Program Renewal's contribution is not cumulatively considerable.

Cumulative Impact BIO-1: Cumulative Impacts on Special-status Species (Less than Significant with Mitigation)

The geographic scope for potential cumulative impacts on special-status species includes the Program Renewal Area and the VHP Planning Area. Cumulative impacts on special-status species could occur if the Program Renewal, development projects within Santa Clara County anticipated in Table 4-1, and the CIP projects identified in Table 4-2 would involve concurrent activities that would 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 CDFW.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative impacts on special-status species, depending on the project location and timing, construction and operations and maintenance activities, use of best management practices, and compliance with and potential coverage under the VHP. Projects that are covered activities under the VHP, including many of those accounted for in Tables 4-

1 and 4-2, were or are required to comply with VHP Conditions, implement VHP Avoidance and Minimization Measures (AMMs), and pay VHP impact fees. Implementing AMMs would reduce impacts on special-status species and fee payment would contribute to implementation of the VHP Conservation Program (e.g., population or habitat restoration, acquisition, preservation, and management). Although the VHP focuses on covered species, the AMMs and Conservation Program benefit many additional special-status species that occupy the same habitats as the VHP-covered species.

As described and analyzed in Section 3.4, "Biological Resources," the Program Renewal (including implementation of the BMPs listed below) would result in less-than-significant impacts (without requiring mitigation) on: all special-status plant and wildlife species that occur in areas with serpentine influence (Impact BIO-1A); monarch butterfly, crotch's bumble bee, and large marble butterfly (BIO-1C); riffle sculpin (BIO-1F); native, special-status minnows (BIO-1G); estuarine, special-status fish (BIO-1H); essential fish habitat and species subject to fisheries management plans (BIO-1I); California horned lizard, Santa Cruz black salamander, and California giant salamander (BIO-1L); nonbreeding special-status birds (BIO-1M); certain nesting special-status birds (BIO-1N); western snowy plover, Swainson's hawk, tricolored blackbird, long-eared owl, loggerhead shrike, and San Francisco common yellowthroat (BIO-1P); burrowing owl (BIO-1R); golden eagle and bald eagle (BIO-1S); San Francisco dusky-footed woodrat (BIO-1U); San Joaquin kit fox (BIO-1W); mountain lion, American badger, ringtail, and western red bat (BIO-1X); and Pacific harbor seal (BIO-1Y). The Program Renewal would not combine with the other projects discussed above to result in a cumulative impact on these special-status species.

The Program Renewal (including implementation of the BMPs listed below) would result in potentially significant impacts on the following resources that would be reduced to a less-than-significant level with mitigation: non–serpentine-associated special-status plant species (Impact BIO-1B); steelhead (BIO-1D); Pacific lamprey (BIO-1E); California tiger salamander, California red-legged frog, and foothill yellow-legged frog (BIO-1J); northwestern pond turtle (BIO-1K); California Ridgway's rail, California black rail, salt marsh harvest mouse, salt marsh wandering shrew, and Alameda song sparrow (BIO-1O); least bell's vireo and yellow-breasted chat (BIO-1Q); yellow warbler (BIO-1T); pallid bat, Townsend's big-eared bat, and non-special-status bats (BIO-1V); and non-special-status animal species (BIO-1Z). As discussed in Section 3.4, "Biological Resources," the Program Renewal would result in significant impacts on these special-status species during Program activities.

The cumulative impact on special-status species resulting from the Program Renewal in combination with other projects in the Program Renewal Area would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit to these resources of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project; and the benefits to biological resources accruing from the habitat conservation plans (HCPs) being pursued by Valley Water and others. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts to special-status species would occur.

Applicable Best Management Practices and VHP Conditions

The BMPs summarized below would be implemented to reduce impacts on special-status species during the Program Renewal maintenance activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to avoid and minimize times of year when special-status fish, including salmonids, Pacific lamprey, and native, special-status minnows, special-status amphibians, and northwestern pond turtles are most likely to be present.

- **BMP GEN-2**: **Instream Herbicide Application** ensures that in-stream herbicide application is limited to the period from June 15 to October 15, or until significant rainfall is forecasted or observed, when special-status fish, including salmonids, Pacific lamprey, riffle sculpin, and native, special-status minnows, and special-status amphibians are less likely to be present. In addition, herbicides will not be applied directly to water, and herbicide application will comply with the 2014 Salmonid Injunction.

- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** will minimize the exposure of soils containing mercury in portions of the Guadalupe River watershed affected by historic mercury mining.

- **BMP GEN-4**: **Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance (i.e., work area, staging areas, and access routes) is kept to the minimum area necessary to complete maintenance work. As feasible, staging areas and access routes will be located within existing disturbed areas and along existing access roads.

- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.

- **BMP GEN-6.1: Protection of Alameda Song Sparrow and San Francisco Common Yellowthroat** provides additional measures to ensure the protection of active nests of these species, which can be inconspicuous.

- **BMP GEN-6.2: Protection of Nesting Least Bell's Vireos** provides additional survey parameters and restrictions on maintenance activities in least Bell's vireo habitat, as well as appropriate protections for active nests of this species.

- **BMP GEN-7: Protection of Burrowing Owls** requires pre-activity surveys and protective measures for burrowing owls that may be present within or adjacent to work activities. Occupied burrows will be avoided by the Program Renewal.

- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** requires a qualified botanist to identify habitat for special-status plants, including serpentine habitats. Appropriate methods will be used to ensure that maintenance activities avoid all activities within serpentine habitats. In addition, any adjacent serpentine communities would be mapped and delineated in the field, and an appropriate buffer applied to minimize

indirect impacts. In addition, this BMP will ensure that sensitive communities (including wetlands and riparian habitats) are identified and disturbance within these areas is avoided and/or minimized.

- **BMP GEN-9: Protection of Monarch Butterflies** will ensure that milkweed within or near work areas is identified, appropriate vegetation management methods are used, and that either maintenance activities occur between September 1 and March 1 when monarch eggs and larvae are absent or a pre-activity survey is performed to ensure eggs and larvae are avoided.

- **BMP GEN-10: Protection of Crotch's Bumble Bees** requires non-VHP-covered Program Renewal activities to follow the procedures in the *Final Program Renewal Crotch's Bumble Bee Avoidance Plan* (Valley Water 2024), which include staff training, pre-activity habitat assessments and surveys for Crotch's bumble bees prior to the start of work, biological monitoring if Crotch's bumble bee individuals or nests are detected, and avoidance of any active nests that are detected.

- **BMP GEN-11: Avoidance and Protection of Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail** provides survey methods and appropriate protections for active nests of Ridgway's rails and black rails, as well as additional surveys and protections for salt marsh harvest mice, for work occurring in habitat for these species.

- **BMP GEN-12: Protection of California Red-Legged Frogs and California Tiger Salamanders** requires pre-activity surveys in locations where these species are likely to be encountered, and appropriate protective measures if individuals are found. Individuals may be captured and relocated from the work area by a qualified biologist. As stated in the BMP, these pre-activity surveys and protective measures are not required for VHP-covered activities but may be implemented by Valley Water on a voluntary basis.

- **BMP GEN-13: Protection of Foothill Yellow-Legged Frogs** requires pre-activity surveys in locations where this species is likely to be encountered, and appropriate protective measures if individuals are found. Individuals may be captured and relocated from the work area by a qualified biologist. As stated in the BMP, these pre-activity surveys and protective measures are not required for VHP-covered activities but may be implemented by Valley Water on a voluntary basis.

- **BMP GEN-14: Protection of Northwestern Pond Turtles** requires pre-activity surveys in locations where this species is likely to be encountered, and appropriate protective measures if individuals are found. Individuals may be captured and relocated from the work area by a qualified biologist. As stated in the BMP, these pre-activity surveys and protective measures are not required for VHP-covered activities but may be implemented by Valley Water on a voluntary basis.

- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants. For activities adjacent to serpentine communities, equipment and tools will be cleaned and sanitized prior to arrival on the site, footwear will be cleaned and disinfected, work will be scheduled

to avoid rainy periods as feasible, and erosion control and revegetation materials will be clean with a low risk of *Phytophthora* contamination.

- **BMP GEN-16: Protection of Bats and Bat Colonies** requires a pre-activity survey prior to work within 100 feet of suitable bat habitat, protective measures as recommended by a qualified biologist and consultation with CDFW if a colony must be removed or physically disturbed.

- **BMP GEN-17: Protection of the San Francisco Dusky-Footed Woodrat** requires a pre-activity survey prior to work that could result in disturbance of woodrats and their nests, the protection of any individuals found, and relocation of woodrat nests if avoidance is not feasible.

- **BMP GEN-18: Salvage Native Aquatic Vertebrates from Dewatered Channels** requires implementation of a fish and native aquatic vertebrate relocation plan to ensure that fish and native aquatic vertebrates are not stranded during localized dewatering. Streams that support steelhead or Pacific lamprey will require a relocation effort and/or initial on-site monitoring by a qualified biologist, depending on seasonal conditions.

- **BMP GEN-19: Avoidance of Impacts on the San Joaquin Kit Fox** requires pre-activity surveys in areas where the species can potentially occur and the avoidance of active dens. The exclusion of San Joaquin kit foxes from dens may occur with authorization from the USFWS and CDFW, but no injury or mortality of kit foxes would occur, and active maternity dens would be avoided. As stated in the BMP, these measures would be implemented for non-VHP-covered activities only.

- **BMP GEN-20: Hazard Tree Removal** will ensure that no tree known to be occupied by a bald eagle or golden eagle nest that was active within the prior five years would be removed under the Program Renewal.

- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.

- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification, habitat requirements, and appropriate protective measures of special-status plants, monarch butterfly, large marble butterfly, Crotch's bumble bee, salmonids, Pacific lamprey, riffle sculpin, Sacramento hitch, Monterey hitch, southern coastal roach, longfin smelt, white sturgeon, green sturgeon, Chinook salmon, California tiger salamander, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, California horned lizard, Santa Cruz black salamander, California giant salamander, nesting birds and active nests, California Ridgway's rail, California black rail, salt marsh harvest mouse, salt marsh wandering shrew, burrowing owls, bald eagles and golden eagles, San Francisco dusky-footed woodrat, roosting bats, San Joaquin kit fox, and Bay checkerspot butterflies.

- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize the amount of fugitive dust.

- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.

- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.

- **BMP GEN-36: Dust Managemen**t requires implementation of measures to reduce dust within and adjacent to work areas, including watering exposed surfaces, covering haul trucks, sweeping streets, and limiting vehicle speeds.

- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.

- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.

- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.

- **BMPs GEN-40: Dewatering for Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality and special-status fish.

- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas and excluding fish from work areas in tidal locations to avoid and minimize impacts to water quality, special-status fish, and aquatic species.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.

- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.

- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.

- **BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.

- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.

- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

- **BMP BANK-2: Concrete Use near Waterways** provides measures to ensure that fresh concrete is isolated until it no longer poses a threat to water quality.

- **BMP ANI-2: Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail** states that no harmful fumigants will be used under the Program Renewal, and no fumigants will be used within habitat for these species.

- **BMP ANI-3: Burrowing Owl Buffer Zone** specifies that Program Renewal fumigants will not be used within 656 yards around known burrowing owl locations.

- **BMP ANI-4: Animal Control in Sensitive Amphibian Habitat** will ensure that no harmful fumigants will be used, that fumigants will not be used within special-status amphibian habitat, and that any live traps will have openings to allow special-status amphibians to safely exit.

- **BMP REVEG-1: Seeding** would ensure that exposed soils will be stabilized with native seed to prevent erosion.

VHP-covered Program Renewal activities would be required to comply with the following conditions to avoid and minimize impacts on VHP-covered special-status species in the Program Renewal Area:

- **Condition 1: Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed and fully protected species, including the CCC and SCCC steelhead, California tiger salamander, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, California condor, white-tailed kite, least Bell's vireo, bald eagles and golden eagles, San Joaquin kit fox, ringtail, and other legally protected species.

- **Condition 3: Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.

- **Condition 5: Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.

- **Condition 12: Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

- **Condition 13: Serpentine and Associated Covered Species Avoidance and Minimization** will help to avoid and minimize Program Renewal impacts on serpentine habitats, associated special-status plants, and the Bay checkerspot butterfly.

- **Condition 14: Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

- **Condition 15: Burrowing Owl** requires habitat surveys and preconstruction surveys for burrowing owls within mapped survey areas, as well as avoidance measures to protect individuals. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-7 above.

- **Condition 16: Least Bell's Vireo** requires all covered projects within mapped survey areas for this species to conduct habitat surveys and preconstruction surveys and implement avoidance and minimization measures to protect active nests. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-6.2 above.

- **Condition 17: Tricolored Blackbird** requires habitat surveys and preconstruction surveys for nesting tricolored blackbirds, as well as appropriate avoidance and minimization measures and construction monitoring to protect nesting colonies. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-6 above.

- **Condition 18: San Joaquin Kit Fox** requires habitat surveys, preconstruction surveys, and avoidance of occupied dens to avoid all injury to or death of kit foxes, and to minimize harm or harassment. For VHP-covered activities, this condition will replace the protections outlined in BMP GEN-19 above.

- **Condition 19: Plant Salvage when Impacts Are Unavoidable** gives the Habitat Agency the option to salvage seed from VHP-covered special-status plants when impacts cannot be avoided.

- **Condition 20: Avoid and Minimize Impacts to Covered Plant Occurrences** requires pre-activity surveys for VHP-covered special-status plant species and revision of the activity design to avoid impacts, if feasible.

Summary

For the reasons described in Section 3.4, "Biological Resources," the Program Renewal would result in significant impacts on the special-status species listed above. Implementation of the

BMPs and VHP conditions listed above would reduce impacts on some, but not all, of these species. Therefore, the Program Renewal would contribute to the significant cumulative impact on special-status species.

Section 3.4, "Biological Resources," identifies a number of mitigation measures that would be implemented to reduce impacts to sensitive habitats and common and special-status species, listed below. Implementation of the Program Renewal's mitigation measures would ensure that the Program Renewal's contributions to cumulative impacts on special-status species would not be considerable. With implementation of the following mitigation measures, as well as the BMPs and VHP conditions listed above, the Program Renewal's contribution to the significant cumulative impact would be less than significant with mitigation.

Mitigation Measures: The following mitigation measures have been identified to address impacts of Program Renewal on special-status species.

Mitigation Measure BIO-1: Pay Santa Clara Valley Habitat Plan Nitrogen Deposition Fees. See Section 3.4, "Biological Resources," Impact BIO-1A, for the full text of this mitigation measure.

Mitigation Measure BIO-2: Create or Enhance and Preserve Mitigation Populations of Non-VHP-Covered Special-Status Plant Species. See Section 3.4, "Biological Resources," Impact BIO-1B, for the full text of this mitigation measure.

Mitigation Measure BIO-3: Augmentation of Spawning Gravel. See Section 3.4, "Biological Resources," Impact BIO-1D, for the full text of this mitigation measure.

Mitigation Measure BIO-4: Augmentation of Instream Complexity. See Section 3.4, "Biological Resources," Impact BIO-1D, for the full text of this mitigation measure.

Mitigation Measure BIO-5: Salmonid Habitat Restoration Projects. See Section 3.4, "Biological Resources," Impact BIO-1D, for the full text of this mitigation measure.

Mitigation Measure BIO-6: Avoid Impacts on California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog Habitat. See Section 3.4, "Biological Resources," Impact BIO-1J, for the full text of this mitigation measure.

Mitigation Measure BIO-7: Compensatory Mitigation for Impacts on Habitat for the California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog, and Northwestern Pond Turtle. See Section 3.4, "Biological Resources," Impact BIO-1J, for the full text of this mitigation measure.

Mitigation Measure BIO-8: Island Ponds Mitigation. See Section 3.4, "Biological Resources," Impact BIO-1O, for the full text of this mitigation measure.

Mitigation Measure BIO-9: Compensatory Mitigation for Impacts on Least Bell's Vireo and Yellow-Breasted Chat Nesting and Foraging Habitats. See Section 3.4, "Biological Resources," Impact BIO-1Q, for the full text of this mitigation measure.

Mitigation Measure BIO-10: Compensatory Mitigation Impacts on Yellow Warbler Breeding Habitat. See Section 3.4, "Biological Resources," Impact BIO-1T, for the full text of this mitigation measure.

Mitigation Measure BIO-11: Provide Alternative Bat Roost. See Section 3.4, "Biological Resources," Impact BIO-1V, for the full text of this mitigation measure.

Cumulative Impact BIO-2: Cumulative Impacts on Riparian Habitat or Other Sensitive Natural Communities (Less than Significant with Mitigation)

The geographic scope for potential cumulative impacts on riparian habitat and other sensitive natural communities includes the Program Renewal Area and the VHP Planning Area. Cumulative impacts on riparian habitat and other sensitive natural communities could occur if the Program Renewal, the anticipated level of development indicated in Table 4-1, and CIP projects identified in Table 4-2 would involve concurrent activities that would 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 CDFW or USFWS.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative impacts on riparian habitat and other sensitive natural communities, depending on the project location; construction and operations and maintenance activities; use of BMPs; and compliance with and potential coverage under the VHP. Projects that are covered activities under the VHP, including many of those accounted for in Tables 4-1 and 4-2, have been or would be required to comply with VHP Conditions, implement VHP AMMs, and pay VHP impact fees. Implementing AMMs would reduce impacts on sensitive habitats and fee payment would contribute to implementation of the VHP Conservation Program (e.g., habitat restoration, acquisition, preservation, and management). Although the VHP focuses on covered species, the AMMs and Conservation Program benefit riparian, aquatic, and other sensitive habitats. In addition, cumulative impacts to sensitive habitats would be minimized with adherence to requirements of federal, state, and local laws and regulations, including the Clean Water Act, Porter-Cologne Water Quality Control Act, and California Fish and Game Code.

As described and analyzed in Section 3.4, "Biological Resources," the Program Renewal (including implementation of the BMPs listed below) would result in less-than-significant impacts (without requiring mitigation) on non-riparian/non-wetland sensitive plant communities (Impact BIO-2B). The Program Renewal would not combine with the other projects discussed above to result in a cumulative impact on these plant communities.

The Program Renewal (including implementation of the BMPs listed below) would result in potentially significant impacts on riparian habitat, including sycamore alluvial woodland (Impact BIO-2A). Woody riparian habitats in the Program Renewal Area provide a wide range of biological functions for wildlife, including aquatic habitat for fish and other aquatic species, foraging and nesting habitat for birds, and movement corridors for numerous terrestrial species. Due to the sensitivity of woody riparian habitats, their value to wildlife communities, and the potential for extensive effects of the Program Renewal activities on these habitats over time, temporary and permanent impacts on woody riparian habitats would be considered significant under CEQA.

Sensitive plant communities are often of limited distribution and frequently support special-status species or high numbers of common species. Direct Program Renewal impacts to these communities would be extremely limited; any effects on these habitats would be due to indirect impacts such as dust, off-target herbicide application, or nitrogen deposition. Permanent impacts to 2 acres of oak woodlands and temporary impacts to 3 acres of these woodlands are extremely limited relative to the widespread distribution of this community in the Program Renewal Area. Indirect effects of Program Renewal activities on sensitive serpentine communities can occur due to nitrogen emitted by maintenance vehicles and equipment. Such nitrogen can fertilize serpentine soils and allow nonnative grasses and forbs that would not typically be able to colonize (at least robustly) serpentine habitats to become established and outcompete serpentine plants. There is some potential for nitrogen emitted by maintenance vehicles and equipment to contribute to significant cumulative nitrogen deposition impacts on serpentine habitats located downwind of areas where the nitrogen is emitted.

The cumulative impact on riparian habitat and other sensitive natural communities resulting from the Program Renewal in combination with other projects in the Program Renewal Area would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit to these resources of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project; and the benefits to biological resources accruing from the HCPs being pursued by Valley Water and others. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts to riparian habitat and other sensitive natural communities would occur.

Applicable Best Management Practices and VHP Conditions

The BMPs summarized below would be implemented to reduce impacts on riparian habitat and other sensitive natural communities during the Program Renewal activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance (i.e., work areas, staging areas, and access routes) is kept to the minimum area necessary to complete the maintenance work. As feasible, staging areas and access routes will be located within existing disturbed areas and along existing access roads.

- **BMP GEN-8: Avoid Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and/or minimized.

- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.

- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.

- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs.

- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including erosion control measures during the wet season, and measures to keep spoils and chemicals in designated areas which will help to minimize fugitive dust and emissions from entering sensitive areas.

- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.

- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.

- **BMP GEN-35: Dust Managemen**t requires implementation of measures to reduce dust within and adjacent to work areas, including watering exposed surfaces, covering haul trucks, sweeping streets, and limiting vehicle speeds.

- **BMP GEN-37: Vehicle and Equipment Maintenance** provides measures to ensure that vehicles and equipment are kept clean and free of leaks, and no heavy equipment is operated in a live stream where feasible.

- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.

- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.

- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to minimize potential erosion.

- **BMP REVEG-1: Seeding** would ensure that exposed soils will be stabilized with native seed to prevent erosion.

VHP-covered Program Renewal activities would be required to comply with the following conditions to avoid and minimize impacts on VHP-covered special-status species in the Program Renewal Area:

- **Condition 5: Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.

- **Condition 13: Serpentine and Associated Covered Species Avoidance and Minimization** will help to avoid and minimize Program Renewal impacts on serpentine habitats and associated special-status plants.

- **Condition 14: Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

Summary

For the reasons described in Section 3.4, "Biological Resources," the Program Renewal would result in significant impacts on woody riparian vegetation. Implementation of the BMPs and VHP conditions listed above would reduce these impacts, but not to a less-than-significant level. Therefore, the Program Renewal's contribution to the significant cumulative impact on woody riparian vegetation would be cumulatively considerable.

Section 3.4, "Biological Resources," identifies Mitigation Measure BIO-12 that would be implemented to reduce impacts to woody riparian vegetation. With implementation of the following mitigation measure, as well as the BMPs and VHP conditions listed above, the Program Renewal's contribution to the significant cumulative impact on riparian woody vegetation would be reduced to a level not cumulatively considerable and less than significant with mitigation.

Mitigation Measures: The following mitigation measure has been identified to address impacts of Program Renewal on riparian habitat.

> **Mitigation Measure BIO-12: Compensatory Mitigation for Impacts to Woody Riparian Vegetation.** See Section 3.4, "Biological Resources," Impact BIO-2A, for the full text of this mitigation measure.

Cumulative Impact BIO-3: Cumulative Effects on State or Federally Protected Wetlands and Waters (Less than Significant with Mitigation)

The geographic scope for potential cumulative impacts on state or federally protected wetlands and waters includes the Program Renewal Area and the VHP Planning Area. Cumulative impacts on wetlands and waters could occur if the Program Renewal, the anticipated level of development indicated in Table 4-1, and CIP projects identified in Table 4-2 would involve concurrent activities that would have a substantial adverse effect on any wetlands and waters identified in local or regional plans, policies, regulations, or by CDFW or USFWS.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative impacts on wetlands and waters, depending on the project location; construction and operations and maintenance activities; use of BMPs; and compliance with and potential coverage under the VHP. Projects that are covered activities under the VHP, including many of those listed in Table 4-2, have been or would be required to comply with VHP conditions, implement VHP AMMs, and pay VHP impact fees. Implementing AMMs would reduce impacts on wetlands and waters, and fee payment would contribute to implementation of the VHP Conservation Program (e.g., habitat restoration, acquisition, preservation, and management). Although the VHP focuses on covered species, the AMMs and Conservation Program benefit riparian, aquatic, and other sensitive habitats.

In addition, cumulative impacts to wetlands and waters would be minimized with adherence to requirements of federal, state, and local laws and regulations, including the Clean Water Act, Porter-Cologne Water Quality Control Act, and California Fish and Game Code.

Maintenance activities associated with the Program Renewal would result in the short-term, but repetitive, disturbance of wetland (i.e., coastal and valley freshwater marsh, seasonal wetland, tidal salt marsh, and tidal brackish marsh) and aquatic (i.e., riverine, open water, pond, tidal, and intertidal) habitats that provide valuable habitat for fish and wildlife. These activities could result in the placement of fill, hydrological interruption (e.g., dewatering or diversion), alteration of bed and bank, degradation of water quality (e.g., increased sedimentation and turbidity, herbicide contamination), and other direct impacts.

The vast majority of impacts to freshwater and tidal marsh in the Program Renewal Area would be short-term because vegetated marsh would restore to existing conditions within 1-2 years following maintenance activities. Temporary impacts of the Program Renewal on instream freshwater wetlands and tidal wetlands would be less than significant under CEQA. However, permanent impacts that result in the loss of these habitats would be considered significant under CEQA because it would result in the loss of ecologically valuable wetlands.

The cumulative impact on wetlands and waters resulting from the Program Renewal in combination with other projects in the Program Renewal Area would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit to these resources of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project; and the benefits to biological resources accruing from the HCPs being pursued by Valley Water and others. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts to wetlands and waters would occur.

Applicable Best Management Practices and VHP Conditions

The BMPs summarized below would be implemented to reduce impacts on riparian habitat and other sensitive natural communities during the Program Renewal activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** specifies work windows for certain maintenance activities to minimize work activities within wetted portions of channels.
- **BMP GEN-4**: **Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete maintenance work.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands) are identified and disturbance within these areas is avoided and minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.

- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.

- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs.

- **BMP GEN-25: Erosion and Sediment Control Measures** provides erosion control measures to minimize erosion and sedimentation as a result of work activities.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-27: Sediment Transport** ensures that truck beds will be lined to prevent sediment-laden water from being released back into waterways during transport.

- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

- **BMP GEN-33: Spill Prevention and Response** provides measures to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.

- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that criteria air pollutant emissions are reduced.

- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.

- **BMP GEN-39: Vehicle and Equipment Fueling** will minimize the potential for fuel to spill into channels.

- **BMPs GEN-40: Dewatering in Non-Tidal Sites** provides procedures for diverting water around work areas at non-tidal locations to avoid and minimize impacts to water quality.

- **BMP GEN-41: Dewatering in Tidal Work Areas** provides procedures for diverting water around work areas in tidal locations to avoid and minimize impacts to water quality.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** provides measures to maintain and operate pumps and generators to minimize impacts on water quality and aquatic species.

- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** specifies that if high levels of groundwater are encountered during excavations, the water will be managed to ensure that it does not cause water quality degradation in a live stream.

- **BMP SED-3: Restore Channel Features** states that low-flow channels within non-tidal streams will be contoured to facilitate fish passage and emulate pre-construction conditions as closely as possible.

- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** states that the toe of the bank will be protected by leaving vegetation to the maximum extent possible.

- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** requires low–ground pressure equipment to be used to cut or remove instream vegetation, to reduce impacts to the streambed.

- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** requires the site design to be adjusted to prevent potential downstream erosion.

In addition to Valley Water BMPs, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on wetlands and waters:

- **Condition 3: Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.

- **Condition 5: Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.

- **Condition 12: Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

Summary

For the reasons described in Section 3.4, "Biological Resources," the Program Renewal would result in significant impacts on wetlands and waters. Implementation of the BMPs and VHP conditions listed above would reduce or avoid some impacts on temporary and permanent impacts on wetlands and aquatic habitats. However, the Program Renewal would also result in permanent losses of tidal and non-tidal vegetated wetlands and aquatic habitats due to direct impacts from bank stabilization. Impacts to these habitats would be significant under CEQA, in the absence of mitigation measures, because of their ecological value to a diversity of plant and animal species. Therefore, the Program Renewal's contribution to the significant cumulative impact on wetlands and waters would be cumulatively considerable.

Mitigation Measure BIO-13 would be implemented to reduce residual permanent Program impacts on wetlands to a less-than significant level. Implementation of the following mitigation measure would ensure that the Program Renewal's contributions to the significant cumulative impact on wetlands and waters would not be considerable. With implementation of the following mitigation measure as well as the BMPs and VHP conditions listed above, the Program Renewal's incremental contribution to the significant cumulative impact would be reduced to a level less than significant with mitigation.

Mitigation Measures: The following mitigation measure has been identified to address impacts of Program Renewal on wetlands and waters.

> **Mitigation Measure BIO-13: Compensatory Mitigation for Permanent Impacts to Wetlands and Aquatic Habitats.** See Section 3.4, "Biological Resources," Impact BIO-3, for the full text of this mitigation measure.

Cumulative Impact BIO-4: Cumulative Impacts on Movement of Any Native Resident or Migratory Species or Established Wildlife Corridors, or on Use of Native Wildlife Nursery Sites (Significant and Unavoidable)

The geographic scope for potential cumulative impacts on wildlife movement and nursery sites includes the Program Renewal Area and the VHP Planning Area. Cumulative impacts on wildlife movement and nursery sites could occur if the Program Renewal, the anticipated level of development indicated in Table 4-1, and cumulative projects identified in Table 4-2 would involve concurrent activities that would have a substantial adverse effect, either directly or through habitat modifications, on movement of any native resident or migratory species or established wildlife corridors, or on use of native wildlife nursery sites.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative impacts on wildlife movement and nursery sites, depending on the project location and timing, construction and operations and maintenance activities, use of BMPs, and compliance with and potential coverage under the VHP. Projects that are covered activities under the VHP, including many of those listed in Table 4-2, have been or would be required to comply with VHP conditions, implement VHP AMMs, and pay VHP impact fees. Implementing AMMs would reduce impacts on wildlife movement and nursery sites, and fee payment would contribute to implementation of the VHP Conservation Program (e.g., population or habitat restoration, acquisition, preservation, and management). Although the VHP focuses on covered species, the AMMs and Conservation Program benefit many additional species that occupy the same habitats as the VHP-covered species.

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. In the Program Renewal Area, the vegetation communities along streams and rivers often function as environmental corridors in providing habitat for a variety of resident wildlife species. Proposed stream maintenance activities could alter these communities and corridors by breaking them into smaller, disjunct pieces, a process known as fragmentation. However, most impacts occurring over the 10-year span of the Program Renewal will be temporary and located within existing PMAs (i.e., areas where maintenance activities have occurred in the past and will occur in the future with regular frequency). Thus, the additional incremental impact of Program Renewal activities above and beyond those of SMP-2 will be small and will not result in a significant impact under CEQA.

Nursery sites (i.e., areas with very high densities of breeding individuals) of native wildlife species in the Program area are represented primarily by colonial nesting birds. Maintenance activities are expected to occur within or adjacent to great blue heron colonies and other rookeries in the Program Renewal Area. Because heron and egret colonies are located along streams and on reservoirs, maintenance activities can potentially result in direct and indirect impacts on nesting individuals and their habitat. Disturbance of a colony could potentially

result in the loss of large numbers of nests with eggs or young, and possibly failure of those adults to breed in a given year. Because populations of these species in the Program Renewal Area are supported by a small number of nesting colonies, a species' local population can decline due to the permanent dispersal of nesting pairs away from a colony or lower reproductive success by individuals that relocate from a successful colony to inferior nesting sites following disturbance. Maintenance activities such as the removal or modification of trees and other vegetation supporting heron and egret nests could also result in the permanent loss and/or modification of nesting habitat for these species. This would be a significant impact.

The cumulative impact on wildlife movement and nursery sites resulting from the Program Renewal in combination with other projects in the Program Renewal Area would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit to these resources of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project; and the benefits to biological resources accruing from the HCPs being pursued by Valley Water and others. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts to nursery sites would occur.

Applicable Best Management Practices and VHP Conditions

The BMPs summarized below would be implemented to reduce impacts on wildlife movement and nursery sites during the Program Renewal activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.
- **BMP GEN-6: Protection of Nesting Birds** will ensure that pre-activity surveys are conducted prior to the start of work activities that could impact active nests, and an appropriate non-disturbance buffer is established around active nests until the young have fledged.
- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities (including wetlands and riparian habitats) are identified and disturbance within these areas is avoided and/or minimized.
- **BMP GEN-15: Prevention of Spread or Mobilization of Pathogens and Invasive Plants** requires measures such as disinfecting gear and cleaning vehicles to avoid the spread or mobilization of pathogens and invasive plants.
- **BMP GEN-21: In-Channel Minor Activities** specifies that in-channel minor activities will be conducted from the top of bank if access is available and if there are flows in the channel.

- **BMP GEN-22: Employee/Contractor Training** will ensure that Valley Water employees and contractors are trained on BMPs, as well as identification and appropriate protective measures for nesting birds.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

- **BMP GEN-38: Vehicle Cleaning** will ensure that equipment is cleaned to avoid spreading pathogens or exotic/invasive species.

In addition to Valley Water BMPs, VHP-covered Program Renewal activities will comply with the following conditions to avoid and minimize impacts on wetlands and waters:

- **Condition 3: Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.

- **Condition 5: Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.

- **Condition 12: Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.

- **Condition 14: Valley Oak and Blue Oak Woodland Avoidance and Minimization** requires projects located on sites supporting substantial stands of valley or blue oak woodland to minimize impacts.

Although VHP-covered Program Renewal activities will comply with applicable VHP conditions, no VHP conditions focus on the protection of the great blue heron, great egret, snowy egret, black-crowned night heron, or their habitat in the Program Renewal Area, as these species are not currently covered under the VHP or listed as fully protected such that VHP Condition 1 would apply.

Summary

For the reasons described in Section 3.4, "Biological Resources," impacts of the Program Renewal on wildlife movement would be less than significant. Implementation of the BMPs listed above would reduce or avoid impacts due to habitat fragmentation and disturbance of nursery sites. Residual impacts could remain, however, due to the removal or modification (during the nonbreeding season) of trees and other vegetation supporting nests within a colony. The abandonment of a nesting colony, or a substantial decline in the number of herons and/or egrets using the colony as a result of the Program Renewal, would result in a substantial adverse effect on the species' populations unless or until a new successful colony is established because relatively few active colonies are present in the Program Renewal Area

and these species rely on the presence of established colonies for successful breeding. Thus, this impact would be significant under CEQA. However, as discussed in Section 3.4, there is no feasible mitigation available to reduce this impact. This impact would be significant and unavoidable.

No feasible mitigation is available to further reduce significant impacts on nursery sites from the Program Renewal. Implementation of the above-listed BMPs may not reduce impacts below the level of significance in all cases. Based on the above analysis, cumulative impacts from maintenance activities on nursery sites would be significant and unavoidable, and the Program Renewal's contribution to a significant cumulative impact on nursery sites would be cumulatively considerable and thus significant and unavoidable.

Cumulative Impact BIO-5: Cumulative Effects of Conflicts with Local Policies or Ordinances Protecting Biological Resources, or Conflicts with the Provisions of an Adopted HCP, NCCP, or Other Approved Conservation Plan (Less than Significant)

The geographic scope for potential cumulative impacts of conflicts with local policies, ordinances, or approved conservation plans includes the Program Renewal Area and the VHP Planning Area. Cumulative impacts related to policies, ordinances, and conservation plans protecting biological resources could occur if the anticipated level of development indicated in Table 4-1, and cumulative projects identified in Table 4-2 would involve concurrent activities that would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, or conflict with the provisions of an adopted Habitat Conservation Plan (HCP); Natural Communities Conservation Plan (NCCP); or other approved local, regional, or state habitat conservation plan.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative impacts related to policies, ordinances, or habitat conservation plans protecting biological resources, depending on the project location, construction and operations/maintenance activities, use of BMPs, compliance with local policies and ordinances, and compliance with and potential coverage under the VHP. Projects that are covered activities under the VHP, including many of those listed in Table 4-2, have been or would be required to comply with VHP Conditions, implement VHP AMMs, and pay VHP impact fees. In addition, potential cumulative impacts related to conflicts with local policies or ordinances would be minimized by adherence to requirements of policies and ordinances relevant to a given project and project proponent.

Trees protected by local ordinances based on their size or species (referred to herein as "ordinance trees") are common in many of the riparian habitats along the creeks that are maintained by Valley Water, and they are present in some non-instream areas as well. In addition to providing habitat functions and values for common and special-status wildlife species, larger trees provide high-quality nesting sites for raptors; contain roost sites for bats or nesting/denning sites for other animals; provide coarse woody debris to the stream ecosystem; and promote high foliage height diversity, which increases the local diversity of birds. They also provide important shading and aesthetic values. Such trees are protected by local ordinances of Santa Clara County and a number of municipalities within Valley Water's jurisdiction. Thus, these trees merit special consideration in assessing impacts of the Program.

Valley Water would remove some ordinance-size trees in support of the Program Renewal, and tree removal could occur throughout the Program Renewal Area. It is standard Valley Water practice, when feasible, to comply with applicable tree ordinance regulations. However, Valley Water is not legally required to comply with tree ordinances of Santa Clara County and various cities within the Program Renewal Area because either the ordinance by its terms is not applicable to Valley Water (e.g., it does not apply to tree removal on public property) and/or because entities operating under mandates set forth by state law, including water districts, are exempt from municipal police power regulation). Therefore, Valley Water's removal of ordinance-sized trees would not conflict with any local tree ordinance, and this impact is less than significant under CEQA. Nevertheless, recognizing the importance of protected trees, Valley Water would compensate for tree removal where required within the riparian habitat.

Valley Water is a co-permittee under the VHP, which is a Habitat Conservation Plan and Natural Community Conservation Plan. Most of the Program Renewal Area is currently located within the VHP permit area (ICF International 2012). Under an amendment that is expected to be considered for approval in 2026, the VHP permit area would be expanded so that it will include the majority of SMP activities. At that time, Valley Water will comply with all applicable VHP conditions for VHP-covered Program Renewal activities. Once the VHP is amended, the Program Renewal would not be in conflict with the VHP. The impact would be less than significant.

As described in Section 3.4, "Biological Resources," Impacts BIO-5 and BIO-6, potential impacts of conflicts with local policies, ordinances, or approved conservation plans would be reduced or avoided through implementation of the BMPs and VHP conditions listed below. The Program Renewal would not result in a substantial contribution to a significant cumulative impact.

Applicable Best Management Practices and VHP Conditions

The BMPs summarized below would be implemented to reduce cumulative impacts of conflicts with local policies, ordinances, or approved conservation plans during the Program Renewal activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of soil disturbance is kept to the minimum area necessary to complete the maintenance work.

- **BMP GEN-8: Avoid and/or Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities** will ensure that sensitive communities are identified and disturbance within these areas is avoided and/or minimized.

- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to minimize impacts on natural habitat areas due to staging and stockpiling of materials, including locating staging areas in previously disturbed areas and incorporating erosion control measures during the wet season.

- **BMP GEN-28: Stream Access** ensures that existing access routes are used to the extent feasible, and temporary access routes are constructed in a manner that minimizes impacts.

VHP-covered Program activities will comply with applicable VHP conditions, as follows:

- **Condition 1: Avoid Direct Impacts on Legally Protected Plant and Wildlife Species** requires Valley Water to ensure that measures are implemented to avoid direct impacts on state and federally listed species.
- **Condition 3: Maintain Hydrologic Conditions and Protect Water Quality** includes measures (listed in Table 6-2 of the VHP) to minimize hydrology-related impacts on water quality and aquatic habitat.
- **Condition 5: Avoidance and Minimization for In-Stream Operations and Maintenance** includes measures (listed in Table 6-2 of the VHP) to minimize impacts on aquatic and riparian land cover types.
- **Condition 12: Wetland and Pond Avoidance and Minimization** includes measures to ensure that covered projects avoid and minimize impacts on wetlands and ponds, including minimizing erosion and new runoff.
- **Condition 13: Serpentine and Associated Covered Species Avoidance and Minimization** will help to avoid and minimize Program Renewal impacts on serpentine habitats and associated special-status plants.
- **Condition 15: Burrowing Owl** requires habitat surveys and preconstruction surveys for burrowing owls within mapped survey areas, as well as avoidance measures to protect individuals.
- **Condition 16: Least Bell's Vireo** requires all covered projects within mapped survey areas for this species to conduct habitat surveys and preconstruction surveys and implement avoidance and minimization measures to protect active nests.
- **Condition 17: Tricolored Blackbird** requires habitat surveys and preconstruction surveys for nesting tricolored blackbirds, as well as appropriate avoidance and minimization measures and construction monitoring to protect nesting colonies.
- **Condition 18: San Joaquin Kit Fox** requires habitat surveys, preconstruction surveys, and avoidance of occupied dens to avoid all injury to or death of kit foxes, and to minimize harm or harassment.
- **Condition 19: Plant Salvage when Impacts Are Unavoidable** gives the Habitat Agency the option to salvage seed from VHP-covered special-status plants when impacts cannot be avoided.
- **Condition 20: Avoid and Minimize Impacts to Covered Plant Occurrences** requires pre-activity surveys for VHP-covered special-status plant species and revision of the activity design to avoid impacts, if feasible.

Summary

For the reasons summarized above and described in Section 3.4, "Biological Resources," Impacts BIO-5 and BIO-6, and with implementation of the BMPs and VHP conditions listed above, impacts of conflicts with local policies, ordinances, or approved conservation plans

would be less than significant. The Program Renewal would not result in a cumulatively considerable contribution to a significant cumulative impact. This cumulative impact would be less than significant.

Cumulative Impact CR-1: Cumulative Effects on Cultural, Paleontological, and Tribal Cultural Resources (Less than Significant)

The geographic scope of potential cumulative impacts on cultural, paleontological, and tribal cultural resources includes areas of ground disturbance within the Program Renewal Area and Santa Clara County. The Program Renewal would contribute to cumulative impacts on cultural (including historical and archaeological), paleontological, and tribal cultural resources if the Program Renewal, development projects within Santa Clara County anticipated in Table 4-1, and the CIP projects identified in Table 4-2 would adversely affect the same historical, archaeological, paleontological, or tribal cultural resources.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 would be implemented within the geographic scope of potential cumulative cultural, paleontological, and tribal cultural resource impacts. All relevant cumulative projects within the cumulative project area, regardless of known cultural, paleontological, and tribal cultural resources, have the potential to encounter unknown cultural, paleontological, and tribal cultural resources if they involve ground-disturbing activities. Therefore, cumulative projects could result in significant impacts on cultural, paleontological, and tribal cultural resources. Due to federal, state, and local regulations, including CEQA, cumulative projects would likely be required to implement measures similar to those of the Program Renewal, such as worker awareness training and the preparation of monitoring, treatment, and reporting plans.

Ground-disturbing maintenance activities conducted under the Program Renewal would have the potential to disturb and have substantial adverse effects on known or previously undiscovered cultural resources within the Program Renewal Area, including CEQA-defined "historical resources" and "unique archaeological resources." Ground-disturbing maintenance activities conducted under the Program Renewal would have the potential to unearth human remains, including Native American remains. The Program Renewal could affect known or unknown paleontological resources during ground-disturbing or excavation activities. Ground-disturbing maintenance activities conducted under the Program Renewal would have the potential to disturb known or previously undiscovered tribal cultural resources within the Program Renewal Area, including archaeological resources and human remains, as well as archaeological districts and tribal cultural landscapes.

Based on the information provided in Section 3.5, "Cultural Resources," there is the potential for archaeological, historical, or paleontological resources or tribal cultural resources to be uncovered during ground-disturbing activities, and these impacts would be significant in the absence of BMPs. In addition, the Program Renewal would include the BMPs listed below. Therefore, the Program Renewal would not make a cumulatively considerable contribution to significant cumulative impacts to cultural, paleontological, or tribal cultural resources.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce impacts on cultural, paleontological, and tribal cultural resources during the Program Renewal activities. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-47: Minimize Impacts to Inadvertently Discovered Cultural Resources** will ensure that work occurring in areas where archaeological or historical resources are identified will be restricted or stopped until an archaeologist determines if the find meets the California or National Register criteria of significance, or if the find is a unique archaeological or tribal cultural resource. If the resource is assessed as significant and cannot be avoided, an Action Plan will be developed including preparation of a data recovery program, as needed.

- **BMP GEN-48: Discovery of Paleontological Resources** will ensure that work in areas where paleontological resources are identified will be restricted or stopped until a paleontologist performs minor hand-excavation to describe the paleontological resources present and provides treatment recommendations for the find.
- **BMP GEN-49: Discovery of Human Remains** will ensure that if human remains are identified, all work will be restricted or stopped until proper protocols are met, including meeting the requirements of Pub. Res. Code Section 5097.98 and Health and Safety Code Section 7050.5, which requires work to halt in the vicinity of the find, the County coroner to inspect the find and determine the cause of death. If the find is determined to be Native American in origin, the coroner is required to notify the Native American Heritage Commission, who assigns a Most Likely Descendant. The Most Likely Descendant makes recommendations for the appropriate treatment of the human remains.
- **BMP GEN-50: Review of Projects with Native Soil** will ensure that an analysis is conducted of project sites that would involve disturbance/excavation of native soil to determine the potential for affecting archaeological or historical resources. If resources would be impacted and could not be avoided, appropriate management actions (e.g., monitoring during construction, presence/absence testing for subsurface resources, data recovery, etc.) would be developed.

Summary

By implementing the BMPs listed above, known cultural, paleontological, and tribal cultural resources would be identified, evaluated, and avoided if significant, and procedures would be followed to minimize impacts on previously unknown resources. Because these BMPs would ensure that the Program Renewal would not cause substantial adverse changes in the significance of CEQA-defined historical resources, unique archaeological or paleontological resources, or tribal cultural resources, this impact would be less than significant.

For the reasons described above, the Program Renewal would not significantly contribute to cumulative impacts on cultural, paleontological, or tribal cultural resources, and those impacts would not be significant. The Program Renewal would not make a cumulatively considerable contribution to a cumulative significant impact related to cultural, paleontological, or tribal cultural resources. This cumulative impact is less than significant.

Cumulative Impact ENE-1: Cumulative Impacts on Energy (Less than Significant)

The geographic scope of potential energy impacts encompasses areas within Santa Clara County or adjacent to the Program Renewal Area. This is because impacts relative to energy are generally related to the service areas of energy providers. Cumulative energy impacts could occur if the Program Renewal, development projects within Santa Clara County anticipated in Table 4-1, and the CIP projects identified in Table 4-2 would involve concurrent

activities that would result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 would be located in or directly adjacent to the Program Renewal Area, and therefore, could combine with the Program Renewal's energy impacts. It is likely that those projects would be required to implement similar measures as the Program Renewal, as required by local, state, and federal regulations.

The Program Renewal would result in an intermittent increase of energy consumption during maintenance activities associated with worker commutes, operation of maintenance equipment, truck trips, and material hauling. In addition, there may be small amounts of propane and electricity used during the Program Renewal period to power alternative and ZEV equipment. Section 3.5, "Energy," provides estimates of fuel and electricity consumption for the Program Renewal. The energy needs for the Program Renewal would be intermittent and occur throughout the primary work season and less frequently during the rest of the year and would not require additional capacity or substantially increase peak or base period demands for electricity and other forms of energy. Thus, energy would not be consumed in a wasteful, inefficient, or unnecessary manner when compared to other activities in the region.

California has developed goals, regulations, and policies related to renewable energy, including the renewable portfolio standard, which requires California to increase the amount of power supplied by renewable electricity sources. In addition to the state policies, general plans, sustainability plans, and climate action plans covering the Program Renewal Area include policies related to renewable energy and energy efficiency. The Program Renewal would use energy-efficient equipment in line with CARB fleet and equipment requirements, including the modifications to existing regulations that require the use of renewable diesel fuel, which are on the path to renewable energy and zero emission vehicles and equipment.

The expenditure of fuel use for ongoing maintenance activities was determined to be necessary and not wasteful; and would not impede or conflict with an applicable renewable energy or energy efficiency plan. In addition, the Program Renewal would include the BMPs listed below. Therefore, the Program Renewal would not make a cumulatively considerable contribution to a significant cumulative impact to energy.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of Program Renewal to reduce energy use during maintenance activities, although to the exact extent cannot be quantified. Full descriptions of each BMP are provided in Chapter 2, *Project Description,* Table 2-10*.*

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of the work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of GHG emissions.
- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that GHG emissions are reduced.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that impacts

to water quality and aquatic species emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

Summary

For the reasons described above, the Program Renewal would not significantly contribute to cumulative impacts to energy and those impacts would not be significant. The Program Renewal would not result in make a cumulatively considerable contribution to a cumulative significant impact related to energy consumption. This cumulative impact is less than significant.

Cumulative Impact GHG-1: Cumulative Impacts of Greenhouse Gas Emissions (Less than Significant with Mitigation)

Section 3.7, "Greenhouse Gas Emissions," provides estimates and analyzes the GHG emissions associated with Program Renewal-related construction activities. As discussed in Section 3.7, the net increase in GHG emissions for the Program Renewal compared to existing SMP-2 GHG emissions is 832 $MTCO_2e$ per year, based on using 2026 emission factors.

Greenhouse gas impacts are inherently cumulative. The rate of CO_2e emissions would decrease between 2027 and 2036, primarily because of Valley Water's tiered vehicle and equipment replacement programs that are consistent with its CCAP. Nevertheless, the Program Renewal would generate additional GHG emissions, which would have a significant impact on the environment. In addition, the overall goal of SB 32 and AB 1279 is to have a net decrease in GHG emissions, so the Program Renewal's increase in GHG emissions would be inconsistent with this goal, which is a significant impact.

The Program Renewal would include numerous BMPs that would reduce Program Renewal-related GHG emissions. However, additional GHG emissions would not be completely eliminated. Therefore, cumulative GHG impacts would be significant, and the Program Renewal's contribution to cumulative GHG impacts would be cumulatively considerable.

Applicable Best Management Practices

Valley Water would implement the following BMPs as part of the Program Renewal to reduce the potential for impacts of GHG emissions. A full description of the BMPs is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of the work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of CO_2e emissions and therefore reduce the amount of GHG emissions.

- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that the release of CO_2e emissions are reduced and therefore GHG emissions are reduced.

- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that impacts to water quality and aquatic species emissions are minimized. Generators will be

stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

Summary

The Program Renewal would include numerous BMPs that would reduce Program Renewal-related GHG emissions. Nevertheless, the Program Renewal would generate additional GHG emissions. The overall goal of SB 32 and AB 1279 is to have a net decrease in GHG emissions, so the Program Renewal's increase in GHG emissions would be inconsistent this goal. Therefore, cumulative GHG impacts would be significant. While the effectiveness of implementing Mitigation Measure GHG-1 was unknown at the time of SEIR preparation, Mitigation Measure GHG-2 ensures that Valley Water will purchase offsets for net emissions from Program Renewal activities not demonstrated to be reduced by Mitigation Measure GHG-1. As a result, the Program Renewal would not result in a cumulatively considerable contribution to a cumulatively significant impact related to GHG emissions. This cumulative impact is less than significant with mitigation.

Mitigation Measures: The following mitigation measures have been identified to address this impact.

Mitigation Measure GHG-1: GHG Emissions Reduction Practices for Maintenance Activities. See Section 3.7, "Greenhouse Gas Emissions," Impacts GHG-1 and GHG-2, for the full text of this mitigation measure.

Mitigation Measure GHG-2: GHG Emissions Mitigation Program. See Section 3.7, "Greenhouse Gas Emissions," Impacts GHG-1 and GHG-2, for the full text of this mitigation measure.

Cumulative Impact HAZ-1: Cumulative Impacts of Hazards and Hazardous Materials (Less than Significant with Mitigation)

The geographic scope of analysis for cumulative hazardous materials impacts encompasses areas within Santa Clara County or adjacent to the Program Renewal Area. This is because impacts relative to hazardous materials are generally site specific and depend on the location, nature, and extent of the hazardous materials release, as well as on existing and future soil and groundwater conditions. Cumulative hazards impacts could occur if the Program Renewal, development projects within Santa Clara County anticipated in Table 4-1, and the CIP projects identified in Table 4-2 would involve concurrent activities that would create a significant hazard to the public or environment through the transport, use, or disposal of hazardous materials; release hazardous materials into the environment; emit hazardous emissions or materials within one-quarter mile of a school; be located on a hazardous material site; be located within two miles of a public airport and result in excessive noise; expose people or structures to loss, injury, or death involving wildland fires; impair implementation of or physically interfere with an adopted emergency response or evacuation plan; or create a significant hazard to workers or the public through exposure to Valley Fever during construction.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 would be located in or directly adjacent to the Program Renewal Area, and therefore, could combine with the Program Renewal impacts related to hazards and hazardous

materials listed above. The Program Renewal Area is largely developed with a multitude of land uses, and hazardous material sites exist in and adjacent to the Program Renewal Area. It is likely that those projects would be required to implement similar measures as the Program Renewal, such as soil testing and the development of hazardous material business and/or management plans, as required by local, state, and federal regulations.

As described and analyzed in Section 3.8, "Hazards and Hazardous Materials," the Program Renewal would result in less-than-significant impacts related to implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; location on a site included on a list of hazardous materials sites compiled pursuant to Government Section Code 56962.5; and location on a previously undiscovered contaminated site. Therefore, the Program Renewal's contribution these potential cumulative impacts would be less than cumulatively considerable.

Although the BMPs listed below would be implemented with the Program Renewal, the following impacts would remain: significant hazard to the public or environment through the routine use, transport, disposal, or accidental release of hazardous materials; significant impacts from the accidental release of hazards and/or hazardous materials; emission of or handling of hazardous materials within 0.25 mile of an existing or proposed school; and significant hazard to construction workers or the public through the exposure to Valley Fever during construction activities. Other cumulative projects could contribute to this impact. Therefore, cumulative hazards and hazardous materials impacts would be significant, and the Program Renewal's contribution to cumulative hazards and hazardous materials impacts would be cumulatively considerable.

Applicable Best Management Practices

Valley Water would implement the following BMPs as part of the Program Renewal to reduce the potential for impacts from hazards and hazardous materials. A full description of the BMPs is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-2: Instream Herbicide Application** establishes protection measures for the use of instream herbicides and prohibits the use of herbicides in certain conditions to reduce potential impacts associated with herbicide use.
- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** requires sediment removal and bank stabilization activities occurring in portions of the Guadalupe River watershed affected by historic mercury mining to test soil for mercury and implement remediation activities if soils exceed established mercury levels. Workers will also be required to wear personal protective equipment to maintain exposure levels below OSHA standards.
- **BMP GEN-4: Minimize the Area of Disturbance** requires soil disturbance to be minimized to the maximum extent feasible.
- **BMP GEN-24: Work Site Housekeeping** requires the work site to be maintained in a neat and orderly condition, including storing materials and equipment to avoid leaks or other potential impacts associated with hazardous materials.
- **BMP GEN-26: Staging and Stockpiling of Materials** establishes requirements for staging and stockpiling materials to minimize potential impacts associated with these activities, including storing materials away from areas where they could spill into waterbodies or storm drains.

- **BMP GEN-28: Stream Access** establishes temporary access points close to the work area and requires the use of existing exiting ramps and roads to minimize disturbance around the work area and to channels.
- **BMP GEN-29: On-Site Hazardous Materials Management** requires the proper management of hazardous materials, including storing hazardous materials and wastes in watertight containers with appropriate secondary containment. Generators and other equipment with the potential to leak or spill hazardous materials would also be stored and operated with secondary containment to minimize potential impacts of a hazardous materials release.
- **BMP GEN-30: Existing Hazardous Materials** requires that hazardous materials found on site are disposed of properly according to applicable regulatory requirements.
- **BMP GEN-31: Paving and Asphalt Work** requires Valley Water to avoid paving and seal coating in wet weather and when rain is forecasted to prevent hazardous materials from coming into contact with water.
- **BMP GEN-32: Painting and Paint Removal** requires Valley Water to avoid paving and seal coating in wet weather and when rain is forecasted to prevent hazardous materials from coming into contact with water.
- **BMP GEN-33: Spill Prevention and Response** includes the implementation of measures to prevent the accidental release of hazardous materials, specifies protocols for spill response and reporting, and requires that cleanup supplies are available on site.
- **BMP GEN-34: Existing Hazardous Sites** requires Valley Water to conduct a search for existing known contaminated sites as part of the annual NPW prior to conducting maintenance work.
- **BMP GEN-35: Fire Prevention** implements measures to reduce the risk of fire from maintenance activities by equipping equipment with spark arrestors, having fire suppression available at the work site, and keeping flammable materials away from equipment.
- **BMP GEN-36: Dust Management** requires Valley Water to implement the Bay Area Air District's Basic Dust Control Measures that include watering exposed soils, covering haul trucks, limiting vehicle speeds, among others to reduce fugitive dust that may contain NOA.
- **BMP GEN-37: Vehicle and Equipment Maintenance** requires that vehicles and equipment are kept clean without excessive build-up of oil and grease, and that equipment used in creek channels be inspected for leaks each day prior to initiation of work. Equipment servicing and repairs will also be conducted outside of the channel to prevent pollutants from reaching surface waters.
- **BMP GEN-38: Vehicle Cleaning** requires that equipment be cleaned prior to transfer and use in a different watershed and vehicle and equipment washing will occur at approved wash areas in Valley Water's corporation yard.
- **BMP GEN-39: Vehicle and Equipment Fueling** prohibits fueling of vehicles and equipment in the channel or immediate floodplain and requires that designated fueling locations and secondary containment are provided to prevent the accidental release of fuel.

- **BMP GEN-43: Public Outreach** will ensure that the public and local governments, including emergency response providers, are informed of upcoming maintenance work to reduce potential effects to emergency response times.
- **BMP GEN-44: Implement Public Safety Measures** will ensure that work sites have proper signage and trucks will be allowed to pull into and out of work site access points during temporary lane closures to reduce traffic delays.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measures** requires that temporary lane closures be coordinated with the appropriate jurisdictional agency and local emergency service provider, and appropriate traffic control measures are implemented so that emergency vehicle access and response is not impeded.
- **BMP ANI-2: Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail** prohibits the use of fumigants within the range of salt marsh harvest mouse, California's Ridgway's Rail, or California Black Rail identified on Program Renewal range maps.
- **BMP ANI-3: Burrowing Owl Buffer Zone** prohibits fumigant use within known burrowing owl locations.
- **BMP ANI-4: Animal Control in Sensitive Amphibian Habitat** prohibits the use of harmful rodenticides in the Program Renewal Area and prohibits the use of fumigants within habitat areas of special-status amphibians.
- **BMP HM-4: Posting and Notification for Pesticide Use** requires posting of areas where pesticides will be used.

Summary

For the reasons described in Section 3.8, "Hazards and Hazardous Materials," Impact HAZ-1, the Program Renewal would result in a significant impact related to the routine use, transport, disposal, or accidental release of hazardous materials. Implementation of the BMPs listed above would reduce this impact, but not to a less-than-significant level. Therefore, the Program Renewal would contribute to a significant cumulative impact related to hazardous materials.

Implementation of Mitigation Measure HAZ-1, described below, would reduce significant impacts related to a significant hazard to the public or environment through the routine use, transport, disposal, or accidental release of hazardous materials; significant impacts from the accidental release of hazards and/or hazardous materials; emission of or handling of hazardous materials within 0.25 mile of an existing or proposed school; and a significant hazard to construction workers or the public through the exposure to Valley Fever during construction activities. With implementation of the mitigation measure described below, the Program Renewal would result in a less than cumulatively considerable incremental contribution to a significant cumulative impact related to hazards and hazardous materials. Therefore, this cumulative impact would be less than significant with mitigation.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure HAZ-1: Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever.** See Section 3.8,

"Hazards and Hazardous Materials," Impact HAZ-1, for the full text of this mitigation measure.

Cumulative Impact HYD/GM-1: Cumulative Impacts on Hydrology and Geomorphology (Less than Significant)

The geographic scope for potential cumulative impacts to hydrology and geomorphology is the Santa Clara groundwater basin. Cumulative hydrology and geomorphology impacts could occur if the Program Renewal, development projects within Santa Clara County anticipated in Table 4-1, and the CIP projects identified in Table 4-2 would involve concurrent activities that would substantially decrease groundwater supplies or interfere substantially with groundwater recharge and impede sustainable groundwater management of the basin; or substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion, siltation, or flooding on- or offsite; substantially increase the rate or amount of surface runoff in a manner resulting in flooding on- or offsite; create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems; impede or redirect flood flows; or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 would create impervious surfaces to varying degrees and in areas with variable groundwater recharge. Groundwater recharge in the Santa Clara Subbasin includes in-stream percolation from creeks within the basin. Valley Water manages aquifer recharge using local water supply and imported water releases. In addition, other areas overlying the undeveloped areas of the groundwater basin also provided recharge to groundwater levels in the underlying aquifers.

The Program Renewal would use relatively minor amounts of groundwater (e.g., for dust control, equipment cleaning, mixing concrete). Given the region's dependence on groundwater for supply, it is likely that any water used during implementation of Program Renewal activities could have ultimately been sourced from groundwater. However, given the limited scale of the activities and need for water, the effects would be less than significant and would not substantially decrease groundwater supplies. Moreover, none of the maintenance activities would involve substantial creation of new impervious surface area (apart from minor amounts potentially associated with "hard" bank stabilization treatments) over the long term, and thus would not substantially interfere with recharge processes.

Over the longer term (following maintenance activities), implementation of BMPs would ensure that channels are left in a condition such that substantial erosion and sedimentation would not occur – thereby minimizing any impacts to groundwater recharge rates due to fine sediment deposition. Additionally, any new impervious surface associated with certain "hard" bank stabilization treatments would be minor in the context of the larger stream channel/bank and would not substantially affect groundwater recharge.

The Program Renewal would alter the existing drainage pattern of the site or area in the sense that sediment removal, vegetation management, bank stabilization, and related activities would change the physical characteristics of stream channels (e.g., capacity, channel roughness, cross-sectional area). This, in turn, would change the flow patterns and rates within the channels, although largely this would be to return or restore the channels to

historical norms or design. The Program Renewal would not add substantial new impervious surfaces; however, certain activities could potentially increase surface runoff rates from specific areas (e.g., staging areas).

Under existing conditions, the geomorphology of many streams within the Program Renewal Area has been affected by hydromodification, including hardscape development, constraining of the natural floodplain, and operation of dams/reservoirs. While erosion and sedimentation/siltation are natural processes, the Program Renewal is serving to counteract the excessive accumulation of sediment (and vegetation growth) that is contrary to flood protection objectives. Nevertheless, if Program Renewal activities were to cause substantial erosion and siltation over the short term due to ground-disturbing activities, this would be a significant effect under CEQA. Valley Water would implement BMPs (listed below) during Program Renewal activities that would serve to reduce the potential erosion and sedimentation/siltation. In the long term, for the majority of stream reaches within which Program Renewal activities would occur, the baseline condition is net depositional, meaning that sediment loading far outpaces the ability for channels to transport their material downstream. Because the flood protection channels in the Program Renewal Area receive an abundant sediment supply, removing a portion of this sediment through maintenance activities would not create "starved" channels downstream. Thus, maintenance activities would not create additional erosion effects over the long term.

The Program Renewal would not result in the creation of substantial new impervious surface. While bank stabilization design could include "hard" treatment techniques, such as concrete crib walls and sacked concrete, any additional impervious surface associated with these treatments would be negligible in the context of the larger stream channel. Thus, the Program Renewal generally would not result in a substantial increase in the rate or amount of surface runoff. Over the long term, the Program Renewal would seek to restore flow conveyance conditions to reduce the potential for flooding.

The Program Renewal would not involve creation of substantial new impervious surface area. Bank stabilization activities could create small areas of impervious surface (depending on treatment technique), but this would not substantially increase runoff. Additionally, given implementation of the BMPs summarized below, Program Renewal activities would not substantially increase surface runoff rates from staging areas and access roads that may be denuded/ compacted due to operation of heavy equipment. As a result, the Program Renewal would not create or contribute substantial additional quantities of runoff water.

As discussed above, Valley Water manages stormwater and provides flood protection to the Program Renewal Area through its flood protection facilities (many of which take the form of streams). One of the primary goals of the Program Renewal is to maintain the flow conveyance capacity of these facilities to ensure adequate flood protection. In this respect, the primary effect of the Program Renewal over the long term would be to provide flood protection and minimize flood risk in the Program Renewal Area. Nevertheless, Program Renewal maintenance activities would take place within and adjacent to streams, which would be within the 100-year flood hazard zone, as mapped by FEMA. Valley Water would implement the BMPs summarized below when performing ground-disturbing maintenance activities to substantially reduce the potential for equipment and materials to be present in or adjacent to channels when flood flows occur.

The Program Renewal Area is underlain by the Santa Clara Subbasin and Llagas Subbasin, both of which are designated high priority by DWR (2024). The Program Renewal would not substantially affect groundwater supplies or recharge and would not impede Valley Water's ability to sustainably manage the subbasins.

Based on the above analysis, cumulative impacts on hydrology or geomorphology from would not be significant, and the Program Renewal would not result in a cumulatively considerable incremental contribution to a significant cumulative impact on hydrology or geomorphology. This impact would be less than significant.

Applicable Best Management Practices

The BMPs summarized below would be implemented as part of the Program Renewal activities to help minimize impacts on hydrology and geomorphology. A full description of each BMP is provided in Chapter 2, *Project Description,* Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 unless an extension is granted, based upon identified criteria, which would minimize potential for erosion and sedimentation associated with ground-disturbing activities and limit the potential for substantial rainstorms occurring while staging areas and access roads are being utilized for Program Renewal activities.
- **BMP GEN-21: In-Channel Minor Activities** would require that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel; this would minimize potential for disturbance of the streambed and banks during the maintenance activities.
- **BMP GEN-25: Erosion and Sediment Control Measures** would require that erosion and sediment control measures (e.g., silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization, wood chips, and straw mulch) be implemented during Program Renewal activities. BMP GEN-25 would also require visual inspections and corrective actions to ensure BMPs are functioning correctly and would help to limit potential adverse hydrology and geomorphology impacts from Program Renewal activities, particularly those involving ground disturbance.
- **BMP GEN-26: Staging and Stockpiling of Materials** would impose requirements on staging and stockpiling of materials to minimize potential impacts to hydrology/water quality, such as requiring that staging areas be located on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. BMP GEN-26 would also require that stockpiled soils or other materials not remain exposed during the wet season, unless adequately stabilized/contained, which would further minimize potential for sediments to be discharged to stream systems.
- **BMP GEN-27: Sediment Transport** would require that truck beds used to transport spoils to disposal locations be lined with an impervious material or that the tailgate be blocked, so as to prevent sediment-laden water from being released back into waterways.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing Program Renewal work areas. When

temporary access points are necessary, disturbed areas must be revegetated or otherwise stabilized, and disturbance of the stream bottom will generally be avoided. This will further limit potential erosion and sedimentation associated with Program Renewal activities.

- **BMP SED-2: Prevent Scour Downstream of Sediment Removal** would require that channels be graded to ensure a smooth transition zone following sediment removal activities to prevent potential erosion following restoration of flows. This would help to minimize undesired effects on channel characteristics resulting from Program Renewal activities.
- **BMP SED-3: Restore Channel Features** would require that low-flow channels within non-tidal streams be contoured to facilitate fish passage and emulate the pre-construction conditions as closely as possible within the finished channel topography – further minimizing potential adverse effects associated with changing the channel characteristics and flow patterns.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** would require that the toe of the bank be protected by leaving vegetation to the maximum extent possible, such as to minimize the potential effect of localized erosion. This would reduce potential for erosion of streambanks, and associated downstream sedimentation, associated with the Program Renewal activities over the long term.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low–ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** would require that the site design for bank stabilization activities provide proactive protection of vulnerable areas within the reach of the worksite (e.g., appropriately keyed-in coir logs, riparian planting, strategic placement of rock, and flow deflectors) to prevent potential downstream erosion impacts. Bank stabilization shall also include appropriate transition designs to prevent potential erosion impacts.
- **BMP REVEG-1: Seeding** would require that sites where maintenance activities result in exposed soil be stabilized to prevent erosion; specifically, through seeding with native seed after maintenance activities are complete.

Summary

For the reasons described in Section 3.9, "Hydrology and Geomorphology," impacts of the Program Renewal on groundwater, erosion and siltation, surface runoff, capacity of the area's stormwater drainage system, drainage patterns and flood flows, or groundwater quality would be less than significant. Implementation of the BMPs listed above would reduce or avoid impacts. Therefore, the Program Renewal would not have a cumulatively considerable contribution to a significant cumulative impact on hydrology and geomorphology. This cumulative impact would be less than significant.

Cumulative Impact NZ-1: Cumulative Impacts from Substantial Temporary or Permanent Increase in Ambient Noise Levels or Substantial Incremental Increase in Noise Levels (Significant and Unavoidable)

Noise and vibration are localized issues in that noise/vibration levels attenuate (i.e., decrease) with increasing distance from the source. Therefore, only projects adjacent to the Program Renewal Area and generating noise or vibration at the same time would have the

potential to combine with anticipated noise and vibration generated by Program Renewal activities to result in a cumulative impact. Based on the anticipated level of development indicated in Table 4-1 and the CIP projects identified in Table 4-2, some of these cumulative projects could occur concurrently with the Program Renewal activities, and the combined increase in noise and vibration levels could be noticeable (3 dB or more). This would result in a significant cumulative noise impact.

As discussed in Section 3.10, "Noise and Vibration," the Program Renewal would result in significant noise impacts during sediment removal, vegetation and downed tree management, and bank stabilization activities. Valley Water would implement the BMPs described below to reduce noise impacts during Program Renewal activities. In addition, it is likely that cumulative projects anticipated in Table 4-1 would be required to implement similar noise reduction measures as the Program Renewal based on local, state, and federal noise thresholds and regulations.

Applicable Best Management Practices

The BMPs summarized below would be implemented to reduce noise impacts during Program Renewal activities. Full descriptions of each BMP are provided in **Table 2-10** in Chapter 2, *Project Description*.

- **BMP GEN-43: Public Outreach** would inform the public of upcoming maintenance work through local neighborhood notices, signage, and on Valley Water's website to reduce potential disturbances to the public associated with noise.
- **BMP GEN-45: Minimize Noise Disturbances to Residential Areas** would reduce noise by ensuring equipment has appropriate mufflers installed, idling is minimized, and work times are consistent with noise ordinances.

Summary

Based on the noise estimations and the close proximity of adjacent property boundaries (some of which properties are sensitive receptors) to Valley Water streams and facilities (some less than 50 feet), Program Renewal maintenance activities could increase ambient noise levels by 3 dB or more (a noticeable increase) and/or result in exterior noise levels in excess of 75 dBA, which is the lowest threshold established in noise ordinances for construction equipment. Valley Water would implement BMPs GEN-43 and GEN-45 to reduce noise levels. Nonetheless, proposed maintenance activities have the potential to expose the public (particularly residential receptors) to temporary increases in noise levels exceeding the standards in the local general plans and noise ordinances or cause a substantial incremental increase in noise levels. This impact would be significant. The cumulative impact would also be significant when adding the effects of cumulative projects, and the Program Renewal's contribution to this impact would be cumulatively considerable.

Implementation of Mitigation Measure NZ-1 would require measures to reduce temporary noise increases to further align with adopted noise ordinances in the Program Renewal Area, including setting limits on the noise levels of some specific equipment pieces such as leaf blowers, grinders, and woodchippers; providing contact information to receive noise complaints from grazing animals; and evaluating future use of grazing in specific work areas. No feasible mitigation besides that specified in Mitigation Measure NZ-1 is available to further reduce significant impacts associated with temporary noise from the Program Renewal. Implementation of Mitigation Measure NZ-1 may not reduce temporary noise impacts below the required levels in all cases. Based on the above analysis, cumulative noise

impacts from maintenance activities would be significant, and the Program Renewal's contribution to cumulative noise impacts would be cumulatively considerable and thus significant and unavoidable.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure NZ-1: Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards.** See Section 3.10, "Noise and Vibration," Impact NZ-1, for the full text of this mitigation measure.

Cumulative Impact NZ-2: Cumulative Impacts from Ground Vibration or Ground-borne Noise Levels (Significant and Unavoidable)

For the reasons described previously, cumulative impacts related to ground vibration or ground-borne noise levels could occur if the Program Renewal, the anticipated level of development indicated in Table 4-1, and CIP projects identified in Table 4-2 would involve concurrent activities that would exceed thresholds for ground vibration or ground-borne noise. This would result in a significant cumulative vibration impact.

No BMPs or VHP conditions are available to Valley Water that would reduce ground vibration and ground-borne noise impacts during Program Renewal activities. It is likely, however, that cumulative projects would be required to comply with similar vibration limits as the Program Renewal based on local, state, and federal noise thresholds and regulations.

Applicable Best Management Practices

None of the BMPs described in Chapter 2, *Project Description*, would address ground-borne vibration or ground-borne noise levels generated by the Program Renewal.

Summary

Program Renewal activities would involve pile driving and other activities that would produce substantial ground-borne vibrations. Thus, a significant impact would occur. The cumulative impact would also be significant when adding the effects of cumulative projects, and the Program Renewal's contribution to this impact would be cumulatively considerable.

Mitigation Measure NZ-1 includes a measure requiring that the least vibration-generating method of pile driving be used to the extent feasible at a given location. Even with mitigation, some pile driving activities may still be required that exceed vibration thresholds. Based on the above analysis, cumulative impacts from ground-borne vibration or ground-borne noise levels would be significant, and the Program Renewal's contribution to cumulative ground-borne vibration or ground-borne noise impacts would be cumulatively considerable and thus significant and unavoidable.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure NZ-1: Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards.** See Section 3.10, "Noise and Vibration," Impact NZ-1, for the full text of this mitigation measure.

Cumulative Impact NZ-3: Cumulative Impacts from Siting of Noise-sensitive Land Uses or Receptors in the Vicinity of a Private Airstrip, Airport Land Use Plan, or within Two Miles of a Public Airport (Less than Significant)

Implementation of maintenance activities under the Program Renewal would not result in the siting of noise-sensitive land uses or receptors in the vicinity of a private airstrip, airport land use plan, or within two miles of a public airport. Based on the anticipated level of development indicated in Table 4-1 and the CIP projects identified in Table 4-2, however, some of these cumulative projects could occur concurrently with the Program Renewal activities. It is likely that those cumulative projects would be required to comply with or implement noise reduction measures based on local, state, and federal airport-related noise thresholds and regulations.

As described and analyzed in Section 3.10, "Noise and Vibration," the Program Renewal would not involve significant impacts from siting of noise-sensitive land uses or receptors in the vicinity of a private airstrip, airport land use plan, or within two miles of a public airport. Therefore, the Program Renewal would not result in an incremental cumulatively considerable contribution to a significant cumulative impact related to airport-related noise. Based on the above analysis, cumulative airport-related noise impacts would not be significant, and the Program Renewal's incremental contribution to a significant cumulative impact related to airport-related noise would be less than cumulatively considerable. This cumulative impact would be less than significant.

Cumulative Impact PSU-1: Cumulative Effects on Public Services and Utilities (Less than Significant)

The geographic scope of potential impacts on public services and utilities is limited to those that provide public services to the Program Renewal Area (i.e., police, fire, parks, and schools) and supply the Program Renewal Area with water, solid waste disposal services, electric power, and wastewater.

Cumulative impacts on public services and utilities could occur if the Program Renewal, development projects within Santa Clara County anticipated in Table 4-1, and the CIP projects identified in Table 4-2 would involve concurrent activities that would require new or physically altered public service facilities, including police, fire, parks and schools; require relocated, new, or expanded utilities and service system facilities or disruptions of utilities and service system facilities, including storm drainage, electric power, natural gas, or telecommunications facilities; result in effects on wastewater treatment demand and water supply; and result in exceedance of landfill capacity or non-compliance with regulations related to disposal of excavated sediment or other materials.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in impacts on public services and utilities, depending on their water and wastewater use/need, solid waste quantities and disposal needs, and electricity requirements.

As described and analyzed in Section 3.11, "Public Services and Utilities," the Program Renewal would not involve the construction of any new development projects or involve any long-term activities that would result in an increased demand for public services, such as

police, fire, parks, or schools, that would require new or expanded public services facilities that could cause significant environmental impacts. For these reasons, the Program Renewal would not result in any impacts to parks, schools, or other public services. However, proposed maintenance activities could result in short-term effects to fire or police services. Implementation of the BMPs described below would reduce the potential for Program Renewal activities to result in significant short-term impacts related to increased fire risk and temporary lane or road closures.

Although the Program Renewal would not cause the need for relocated, new, or expanded utilities or service system facilities, any of these utilities or service systems could potentially experience a disruption in service if Program Renewal activities accidentally damaged or interrupted the utilities' distribution or transmission systems. Implementation of the BMPs described below would minimize the potential disturbed areas during maintenance work and would require Valley Water to identify the locations of utility lines that may be affected by Program Renewal activities and to minimize utility disruptions through obtaining necessary permits, verifying utility locations, and notifying all affected utility services and residents and businesses prior to initiating work. In addition, any disruptions to utilities and service systems would be temporary (i.e., temporary disruptions would last for as long as maintenance is conducted at the site) and service would be restored once maintenance is completed.

The Program Renewal would not involve the construction of any new or expanded housing or other occupied buildings that would require the expansion of water or wastewater systems or new water and wastewater facilities. A small quantity of wastewater would be generated from portable restrooms, which would be off hauled by Valley Water or a contractor to an appropriate disposal facility. Proposed maintenance activities would require limited quantities of water for portable restrooms/hand washing stations, grazing, dust control, irrigation, and vehicle cleaning. Water demands would be met with existing Valley Water supplies and would be generally trucked into work sites, as necessary. Therefore, sufficient water supplies would be available for the Program Renewal.

Sediment removal has historically been the largest type of waste generated during Valley Water Maintenance activities. Although Valley Water does not have a projection for the volume of sediment, vegetation, and trash to be removed under the Program Renewal, sediment removal volumes would likely remain similar compared to work conducted previously. Waste generated from these activities would not represent a significant portion of available landfill capacity. As such, the landfills in Santa Clara County would have sufficient capacity to serve the needs of the Program Renewal. Furthermore, the implementation of BMPs listed below would decrease the soil waste generated during Program Renewal activities.

Applicable Best Management Practices

Valley Water would implement the following BMPs as part of the Program Renewal to prevent maintenance activities from disrupting public services, utilities, and service system facilities. A description of each BMP is provided in Chapter 2, *Project Description*, Table 2-10.

- **BMP GEN-3**: **Avoid Exposing Soils with High Mercury Levels** will ensure that soil from creeks that contain mercury will first be remediated. If remediation is not sufficient and soils continue to contain mercury that exceeds 0.2 milligrams per

kilogram of erodible sediment, the soil will be removed and disposed of in a Class I landfill.

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work areas, staging areas, and access routes are kept to the minimum area necessary in order to decrease the likelihood of impacts to underground utilities.
- **BMP GEN-20: Hazard Tree Removal** will ensure that no soil disturbance will occur during hazard tree remediation (aside from superficial disturbance of ground surface), which will limit the amount of sediment/soil that will need to be disposed of off-site.
- **BMP GEN-28: Stream Access** will ensure that crews access streams either by using existing access paths or temporary access points that will avoid utilities in the Program Renewal Area.
- **BMP GEN-29: On-Site Hazardous Materials Management** will ensure that any hazardous waste is correctly managed and disposed of through the proper channels.
- **BMP GEN-30: Existing Hazardous Materials** will ensure that any hazardous materials found within the Program Renewal Area during work activities are disposed of according to the appropriate regulatory requirements.
- **BMP GEN-34: Existing Hazardous Sites** will ensure that Valley Water conducts a search for known contaminated sites prior to ground-disturbing activities. If a hazardous site is identified, the proper contacts will be notified.
- **BMP GEN-38: Vehicle Cleaning** will ensure that vehicles are cleaned only as needed to help minimize the amount of water that will be used.
- **BMP GEN-43: Public Outreach** will ensure that all affected residents and businesses are notified of any temporary road closures prior to initiating work to limit potential delays or disruptions that may occur due to the closures.
- **BMP GEN-51: Investigation of Utility Line Locations** will ensure that Valley Water evaluates work areas prior to Program Renewal activities to avoid damaging or disrupting utilities. Additionally, this BMP will ensure that appropriate permits are obtained for excavating near utilities, utility locations are verified using field surveys, specifications are created which include correct procedures for excavating in the vicinity of utilities, utility services and residents are given adequate notice of upcoming maintenance projects to allow for necessary changes/relocation of services, and disconnected cables are reconnected following the completion of activities.
- **BMP SED-5: Sediment Characterization** will ensure that sediment removed during Program Renewal activities will be properly characterized and reported in Valley Water's annual summary report.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** will ensure that the potential for localized erosion is minimized as much as possible by protecting the toe of the bank and leaving vegetation in place in order to decrease the total amount of sediment removal needed.

Summary

For the reasons described in Section 3.11, "Public Services and Utilities," the Program Renewal would result in less-than-significant impacts on public services (i.e., police, fire,

parks, and schools) and utilities (water, solid waste disposal services, electric power, and wastewater). Implementation of the BMPs listed above would further reduce temporary impacts on public services and utilities. In addition, it is likely that development projects anticipated in Table 4-1 and CIP projects identified in Table 4-2 would be required to implement similar impact-reducing measures as the Program Renewal. Based on the above analysis, cumulative impacts on public services and utilities would not be significant, and the Program Renewal would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to public services and utilities. This cumulative impact is less than significant.

Cumulative Impact TR-1: Cumulative Impacts to Traffic and Transportation (Less than Significant)

The geographic scope of potential cumulative impacts related to traffic and transportation includes roadways in the Program Renewal Area and within Santa Clara County. Cumulative transportation and traffic impacts could occur if the Program Renewal, the anticipated level of development indicated in Table 4-1, and CIP projects identified in Table 4-2 would involve concurrent activities that would result in conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; inconsistency with CEQA Guidelines Section 15064.3(b); or a substantial increase in hazards due to a geometric design feature or incompatible use or inadequate emergency access.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative transportation and traffic impacts, depending on the magnitude and location of construction activities or increased use of local roadways during operation. These cumulative projects are likely to result in greater long-term transportation impacts and more substantial impacts to emergency access as compared to the Program Renewal (if they would include road closures or substantial delays). It is likely that those projects would be required to comply with or implement measures based on local, state, and federal airport-related noise thresholds and regulations.

As described and analyzed in Section 3.12, "Traffic and Transportation," the Program Renewal would result in less-than-significant impacts from conflicts with a program, plan, ordinance or policy addressing the circulation system; conflicts with CEQA Guidelines Section 15064.3(b); and the substantial increase of hazards due to a geometric design feature or incompatible use. Based on the above analysis, cumulative impacts on traffic and transportation would not be significant, and the Program Renewal would result in a less than cumulatively considerable incremental contribution to a significant cumulative impact related to traffic and transportation. This cumulative impact would be less than significant.

Applicable Best Management Practices

The BMPs summarized below would continue to be implemented as part of the Program Renewal to reduce impacts on the circulation system, including transit services and facilities, bicycle facilities, and pedestrian facilities, and impacts on emergency access. Full descriptions of each BMP are provided in Chapter 2, *Project Description*, Table 2-10.

- **BMP GEN-43: Public Outreach** will ensure that the public is informed about maintenance work. Valley Water will distribute notices to neighborhoods, provide notification to local governments (including cities, county, and local fire districts), and

post information on the Valley Water Program Renewal website. For high-profile projects, at Valley Water's discretion, signs will be posted in neighborhoods to notify the public of maintenance schedules, trail closures, and road/lane closures.

- **BMP GEN-44: Implement Public Safety Measures** will ensure that signage is posted in public access areas and near recreational trails to warn the public about maintenance work. Advance signage will be posted for temporary road closures and temporary fencing will be installed above bank repair sites. If necessary, Valley Water will provide personnel to provide traffic control and site security.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measures** will ensure that traffic flow is maintained. If temporary lane closures are necessary or traffic flow is going to be affected, Valley Water will coordinate with the appropriate jurisdictional agency to try and schedule work to occur outside of peak traffic hours. Bicycle and pedestrian facilities closures will be scheduled outside of peak hours to the maximum extent practicable. If public transit access and routes will be affected by temporary road closures and require detours, Valley Water will contact the affected transit authorities. and local emergency service providers to ensure that there is emergency vehicle access and that response times are not impeded.

Summary

As described and analyzed in Section 3.12, "Traffic and Transportation," the Program Renewal would result in less-than-significant impacts from conflicts with a program, plan, ordinance or policy addressing the circulation system; conflicts with CEQA Guidelines Section 15064.3(b); and the substantial increase of hazards due to a geometric design feature or incompatible use. Therefore, the Program Renewal's incremental contribution to these cumulative impacts would be less than cumulatively considerable.

Cumulative Impact WQ-1: Cumulative Effects on Water Quality (Less than Significant with Mitigation)

The geographic scope for potential cumulative impacts to water quality is the Program Renewal Area, the Santa Clara groundwater basin, and the Coyote Creek and Upper Penitencia Creek watersheds. Cumulative water quality impacts could occur if the Program Renewal the anticipated level of development indicated in Table 4-1, and CIP projects identified in Table 4-2 would involve concurrent activities that could substantially degrade water quality resulting in violation of surface water quality standards or WDRs, or otherwise substantially degrade surface water quality; substantially degrade water quality resulting in violation of groundwater quality standards, or otherwise substantially degrade groundwater quality; create or contribute runoff water that would provide substantial additional sources of polluted runoff; in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or conflict with or obstruct implementation of a water quality control plan.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative impacts on water quality, depending on their location, proposed construction activities, use of BMPs, and proposed operational activities. However, many potential cumulative impacts to water quality would be minimized with adherence to requirements of federal, state, and local water quality regulations, including the NPDES Construction General Stormwater Permit and adherence to the Municipal Regional Stormwater NPDES permit requirements for urban runoff. Conditions of the Construction

General Permit would be tailored to be sufficient to maintain water quality within the identified cumulative setting (e.g., watersheds) and/or Santa Clara groundwater basin.

Implementation of the Program Renewal would have potential to result in adverse effects on surface water and groundwater quality through a variety of different mechanisms or based on different types of activities. These include ground-disturbing equipment and vehicles, diversion and dewatering, hazardous materials releases or contact with surface water, pesticide use, disturbance of existing contaminated sites and soils, sediment handling and disposal, and long-term effects of Program Renewal activities/facilities. As described in Chapter 2, *Project Description* (and summarized below), however, Valley Water would implement a variety of BMPs to reduce or avoid impacts on surface water and groundwater quality.

The Program Renewal would not involve the construction of large areas of impermeable surfaces that would contribute substantial additional sources of polluted runoff. In addition, implementing the Program Renewal would not require expansion of existing channels within the Program Renewal Area and would not alter the quantity of stormwater runoff conveyed from adjacent lands and received in stream channels. Many Program Renewal activities would have potential to reduce/eliminate sources of pollutants over the long term, which would serve to benefit the quality of runoff water. As such, although the Program Renewal would not increase surface runoff generation, it could reduce pollutants sources for runoff passing over/through Program Renewal areas. Over the short term, the Program Renewal would use hazardous materials, primarily associated with heavy equipment and vehicles (e.g., fuel, oil, lubricants), and vegetation management would require use of herbicides. Use and storage of these materials would create the potential for leaks or spills, which could subsequently result in generation of polluted runoff. However, Valley Water would implement the BMPs (summarized below) to minimize or avoid any potential for polluted runoff generation.

Program Renewal activities would largely take place within stream channels or adjacent floodplains, and thus would generally occur within flood hazard zones. To a lesser extent, Program Renewal activities occurring near the San Francisco Bay shoreline may be within the tsunami hazard zone, as mapped by the California Department of Conservation (CDOC 2024). Additionally, Program Renewal activities occurring adjacent to large standing bodies of water (e.g., reservoirs) could be exposed to a seiche wave. Therefore, there would be some potential for a flood, tsunami, or seiche to occur at the same time that activities are taking place, which could result in a release of pollutants due to inundation of Program Renewal work areas. Over the longer term (once maintenance activities are completed at a given site), the Program Renewal would not introduce any new permanent sources of pollutants to the area. Rather, the Program Renewal activities would largely remove existing sources of pollution; reduce the extent and severity of future flooding events; and restore channel conveyance capacity that has become depleted over time. Therefore, the Program Renewal would help reduce risk of pollutant release during future flooding events.

Implementation of the Program Renewal would have potential to impact water quality through ground disturbance from heavy equipment and vehicles; diversion/dewatering activities; use and storage of hazardous materials, including pesticides and herbicides; disturbance of existing contaminated sites or soils; and sediment handling and disposal. Portions of the Program Renewal Area are under the jurisdiction of either the San Francisco Bay RWQCB (Region 2) and Central Coast RWQCB (Region 3). As such, the Program Renewal

Area is subject to the Basin Plans for the respective RWQCBs, including the beneficial uses of specific waterbodies identified in the plans and the water quality objectives that serve to protect/achieve the beneficial uses. If adequate precautions are not taken and activities are not managed properly, the short-term water quality effects from Program Renewal maintenance activities could conflict with or obstruct implementation of the San Francisco Bay and Central Coast Basin Plans. Although Valley Water would implement a number of BMPs that would minimize the Program Renewal's potential effects on surface and ground water quality, conflicts with a water quality control plan would remain a significant impact.

Applicable Best Management Practices

The BMPs summarized below would be implemented to minimize impacts to emergency response and evacuation procedures as a result of implementation of the Program Renewal. A full description of each BMP is provided in Chapter 2, *Project Description*, Table 2-10.

- **BMP GEN-1: In-Channel Work Windows** would require that ground-disturbing maintenance activities occur between June 15 and October 15 unless an extension is granted, based upon identified criteria. BMP GEN-1 would minimize potential for erosion and discharge of sediment, as well as off-site movement of other pollutants (e.g., hazardous materials), associated with ground-disturbing activities.
- **BMP GEN-2: Instream Herbicide Application** would require that instream herbicide applications take place between June 15 and October 15 unless an extension is granted and imposes other requirements for herbicide application. BMP GEN-2 also specifies herbicides that may be applied under the Program Renewal and would help to minimize any potential impacts to stream water quality from the use of herbicides.
- **BMP GEN-3: Avoid Exposing Soils with High Mercury Levels** prescribes measures to reduce potential for exposing soils high in mercury (and subsequent contamination of the environment or exposure of workers to safety hazards) specifically in the Guadalupe River watershed. This would including testing potentially contaminated sediment, performing remediation of affected soils, and providing personal protective equipment (PPE) to workers, as appropriate.
- **BMP GEN-21: In-Channel Minor Activities** would require that in-channel minor work activities be conducted from the top of bank if access is available and there are flows in the channel. This would minimize potential for disturbance of sediment within the channel and possible release of pollutants (e.g., hazardous materials) contained within construction equipment associated with the minor work activities.
- **BMP GEN-22: Employee/Contractor Training** would require that Valley Water staff and contractors receive annual training on BMPs, including how to avoid impacts on water quality during in-stream work. This would further minimize the potential for water quality impacts during Program Renewal activities.
- **BMP GEN-24: Work Site Housekeeping** would require that Valley Water employees and contractors maintain work sites in a neat and orderly condition, including storing materials and equipment to avoid erosion, leaks, or other potential impacts to water quality. BMP GEN-24 would require that debris (e.g., trash) be removed and disposed of, and would reduce potential for discharge of pollutants from work and staging areas, including leaks of hazardous materials associated with construction equipment.

- **BMP GEN-25: Erosion and Sediment Control Measures** would require that erosion and sediment control measures (e.g., silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization, wood chips, and straw mulch) be implemented during Program Renewal activities. BMP GEN-25 would prohibit discharge of oily, greasy, or sediment-laden runoff to any waterways, and would require visual inspections and corrective actions to ensure BMPs are functioning correctly. BMP GEN-25 would help to limit potential adverse water quality impacts from Program Renewal activities, particularly those involving ground disturbance.
- **BMP GEN-26: Staging and Stockpiling of Materials** would impose requirements on staging and stockpiling of materials to minimize potential impacts to water quality, such as locating staging areas outside of sensitive habitats and stockpiling/storing materials away from areas where they could spill into waterbodies or storm drains. BMP GEN-26 would require that stockpiled soils or other materials not remain exposed during the wet season, unless adequately stabilized/contained. These requirements would further minimize potential water quality impacts from construction site runoff.
- **BMP GEN-27: Sediment Transport** would require that truck beds used to transport spoils to disposal locations be lined with an impervious material or that the tailgate be blocked, so as to prevent sediment-laden water from being released back into waterways.
- **BMP GEN-28: Stream Access** would require that Valley Water personnel use existing ramps and roads to the extent feasible in accessing Program Renewal work areas. When temporary access points are necessary, disturbed areas must be revegetated or otherwise stabilized, and disturbance of the stream bottom will generally be avoided. These requirements will further limit potential erosion and sedimentation associated with Program Renewal activities.
- **BMP GEN-29: On-Site Hazardous Materials Management** would require proper management of hazardous materials used during Program Renewal activities; in particular, hazardous materials and wastes would need to be stored in watertight containers and with appropriate secondary containment. Generators and other equipment with potential to leak or spill fuels and lubricants would need to be stored and operated with secondary containment, and other measures to prevent release of hazardous materials/wastes would be implemented.
- **BMP GEN-30: Existing Hazardous Materials** would require that if hazardous materials are found, they would be carefully removed and disposed of according to applicable regulatory requirements, and that Valley Water staff wear proper protective gear and store the materials in an appropriate hazardous waste container until the materials can be properly disposed of at a hazardous waste facility.
- **BMP GEN-31: Paving and Asphalt Work** would require that Valley Water avoid paving and seal coating in wet weather or when rain is forecasted, so as to prevent uncured materials from contacting stormwater runoff. BMP GEN-31 also includes other measures to prevent pollution of stormwater due to contact with fresh asphalt and concrete and would minimize potential water quality impacts associated with this type of work under the Program Renewal.

- **BMP GEN-32: Painting and Paint Removal** would prohibit cleaning brushes or rinsing paint containers into a street, gutter, storm drain, or stream, and also includes measures for managing and disposing of paint chips and residue. BMP GEN-32 would limit water quality impacts from this type of work.
- **BMP GEN-33: Spill Prevention and Response** would implement measures to prevent the accidental release of hazardous materials (e.g., chemicals, fuels, lubricants), and require that materials for cleanup of spills are available on site. BMP GEN-33 also specifies protocols for spill response and reporting. These measures and protocols would ensure that any spills of hazardous materials associated with Program Renewal activities are minimized, as feasible.
- **BMP GEN-34: Existing Hazardous Sites** would require that Valley Water conduct a search for known contaminated sites upon selection of Program Renewal maintenance site locations using the SWRCB's GeoTracker database. For any ground-disturbing maintenance activities within 1,500 feet of "open" sites, Valley Water would work with the RWQCB case manager to ensure proposed activities do not affect cleanup or monitoring activities or threaten the public or environment.
- **BMP GEN-37: Vehicle and Equipment Maintenance** would require that vehicles and equipment used in Program Renewal activities be kept clean without excessive build-up of oil and grease, and that equipment used in the creek channel be inspected for leaks each day prior to initiation of work. Additionally, BMP GEN-37 would require that equipment servicing and repairs be performed in a location away from the creek channel or where pollutants could be released to surface waters.
- **BMP GEN-38: Vehicle Cleaning** would require that equipment be cleaned prior to transfer and use in a different watershed, so as to prevent the spread of sediment, pathogens, and exotic/invasive species. BMP GEN-38 would prohibit wash water from being discharged to creek channels or storm channels without being subjected to adequate filtration.
- **BMP GEN-39: Vehicle and Equipment Fueling** would prohibit fueling of vehicles and equipment in the channel or immediate floodplain unless the relevant equipment cannot be relocated. Designated fueling locations should be specified (away from waters) and secondary containment must be provided. These requirements would minimize potential for accidental releases of fuel to water bodies during Program Renewal activities.
- **BMP GEN-40: Dewatering for Non-Tidal Sites** would require that water be diverted around the work area via a temporary dam and/or bypass for work within non-tidal streams and channels. Measures would be prescribed to avoid and minimize impacts to water quality from dewatering, such as protecting flows from maintenance activity-related pollutants (e.g., soils, equipment lubricants, or fuels) and using filtration devices or settling basins, as appropriate, to minimize turbidity effects.
- **BMP GEN-41: Dewatering in Tidal Work Areas** would prescribe requirements for dewatering work areas in tidal areas. If cofferdam bypass pipes are to be used, water discharged from such pipes would be required not to exceed 50 nephelometric turbidity units (NTUs) above background levels.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** would require that pumps and generators used during dewatering operations be maintained and operated in a manner that minimizes impacts to water quality (e.g., generators to be

stored or operated with secondary containment). This requirement would further minimize any potential impacts associated with dewatering during Program Renewal activities.

- **BMP SED-1: Groundwater Management** would require that encountered groundwater be pumped out of work sites (unless the work activity is not causing water quality degradation in a live stream), and that water quality monitoring be conducted. Excess sediment would be removed from extracted water prior to the water re-entering a creek.
- **BMP SED-4: Berm Bypass** would require that where sediment removal is accomplished without a bypass by removing alternating cells, the berm between the work and the live channel is wide enough to prevent introduction of turbid water into the live channel.
- **BMP VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal** would require that the toe of the bank be protected by leaving vegetation to the maximum extent possible, such as to minimize the potential effect of localized erosion. This requirement would reduce potential for discharge of sediment to receiving waters associated with the Program Renewal activities over the long term.
- **BMP VEG-3: Use Appropriate Equipment for Instream Removal** would require that low–ground pressure equipment (e.g., tracked wheels) be utilized for cutting or removing instream vegetation to reduce impacts to the streambed.
- **BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream** would require that the site design for bank stabilization activities provide proactive protection of vulnerable areas within the reach of the worksite (e.g., appropriately keyed-in coir logs, riparian planting, strategic placement of rock, and flow deflectors) to prevent potential downstream erosion impacts. Bank stabilization shall also include appropriate transition designs to prevent potential erosion impacts.
- **BMP BANK-2: Concrete Use Near Waterways** would require that fresh concrete be isolated until it no longer poses a threat to water quality, by using various measures (e.g., wet-sacked concrete and poured concrete to be excluded from the wetted channel for 30 days; dry-sacked concrete prohibited from use in the channel; designated location for cleaning out concrete transit vehicles; adequately sized temporary concrete washout facilities, and prohibiting slurry wastes from entering storm drains or watercourses).
- **BMP REVEG-1: Seeding** would require that sites where maintenance activities result in exposed soil be stabilized to prevent erosion; specifically, through seeding with native seed after maintenance activities are complete.
- **BMP ANI-5: Slurry Mixture near Waterways** would require that slurry-type mixes used to fill rodent burrows be prevented from entering waterways through use of appropriate erosion control methods and complying with manufacturer's specifications.

Summary

Given implementation of applicable Valley Water BMPs and compliance with relevant existing laws and regulations, Program Renewal activities would not violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface water quality; violate groundwater quality standards or WDRs, or otherwise substantially

degrade groundwater quality; alter drainage patterns to generate substantial amounts of polluted runoff; or substantially risk release of pollutants due to inundation associated with flooding, tsunami, or seiche. Impacts related to conflicts with a water quality control plan, however, would remain significant. Mitigation Measures BIO-3, BIO-4, and BIO-5, listed below, would reduce the impact on conflicts with a water quality control plan to a less-than-significant level. Based on the above analysis, cumulative impacts on water quality would be less than significant after mitigation, and the Program Renewal's incremental contribution to cumulative water quality impacts would be less than cumulatively considerable after mitigation. This cumulative impact would be less than significant.

Mitigation Measures: The following mitigation measures have been identified to address this impact.

> **Mitigation Measure BIO-3: Augmentation of Spawning Gravel.** See description in Section 3.4, "Biological Resources," Impact BIO-1, for the full text of the mitigation measure.
>
> **Mitigation Measure BIO-4: Augmentation of Instream Complexity.** See description in Section 3.4, "Biological Resources," Impact BIO-1, for the full text of the mitigation measure.
>
> **Mitigation Measure BIO-5: Salmonid Habitat Restoration Projects.** See description in Section 3.4, "Biological Resources," Impact BIO-1, for the full text of the mitigation measure.

Cumulative Impact WF-1: Cumulative Impacts Related to Wildfire (Less than Significant)

The geographic scope of potential impacts related to wildfire includes the Program Renewal Area and Santa Clara County, particularly those areas located within a wildland-urban interface (WUI). Incorporated areas within a WUI include parts of Cupertino, Gilroy, Los Altos, Milpitas, Monte Sereno, Morgan Hill, Palo Alto, San Jose, Saratoga, Los Altos Hills, and Los Gatos (Santa Clara County Firesafe Council 2024). Cumulative impacts related to wildfire could occur if the Program Renewal, the anticipated level of development indicated in Table 4-1, and CIP projects identified in Table 4-2 would involve concurrent activities that would substantially impair an adopted emergency response plan or emergency evacuation plan; exacerbate wildfire risks and thereby expose people or structures to a significant risk of loss, injury, or death, or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; require the installation or maintenance of infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment; or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Many of the development projects anticipated in Table 4-1 and the CIP projects listed in Table 4-2 could result in cumulative impacts related to wildfire, depending on the project location and timing, and construction and operations and maintenance activities.

As described in Section 3.15, "Wildfire," Program Renewal activities that involve the operation of heavy equipment on roadways could potentially interfere with traffic movement

and impair evacuation procedures and emergency response in the event of an emergency, such as a wildfire. However, implementation of BMPs, summarized below, would minimize impacts on emergency access and evacuation during maintenance work. Valley Water would be required to notify the public about maintenance work, including by providing signage and temporary fencing. Valley Water would also coordinate with emergency service providers in areas where maintenance activities may affect traffic flow to ensure that emergency vehicle access and response times will not be impeded.

Proposed maintenance activities, such as mowing, involving operation of vehicles and internal combustion engine equipment in dryland areas (e.g., high or very high FHSZs) could increase risk of accidental ignition of a wildfire that could potentially expose occupants/people and structures to significant wildfire-related risks. Valley Water would comply with applicable Fire Code and Pub. Res. Code requirements to minimize the potential of igniting a wildfire during Program Renewal maintenance activities. Implementation of BMPs, summarized below, would further reduce wildfire risk.

The Program Renewal would not require the installation of any new infrastructure but would require the maintenance of existing infrastructure such as flood protection channels. Some maintenance activities (e.g., vegetation management) would reduce fire fuel loads and maintain access to Valley Water facilities in the long term. As discussed above, these activities could increase local fire risk or potentially provide an ignition source to flammable environments. However, the potential for significant impacts would be reduced through compliance with applicable regulatory requirements and implementation of the BMPs summarized below.

The Program Renewal aims to reduce flood risk, maintain the structural integrity of Valley Water facilities, enhance ecological function, and ensure public safety. To mitigate flood risk, the Program Renewal includes activities such as removing accumulated sediment, vegetation, and debris to restore channel capacity. Over time, these efforts would lower the risk of flooding and landslides, including those associated with wildfire events near the Program Renewal Area. Although these activities could increase local fire risk in the short term during Program Renewal maintenance, the potential for significant impacts would be reduced through compliance with applicable regulatory requirements and implementation of the BMPs summarized below.

Applicable Best Management Practices

The BMPs summarized below would be implemented to minimize impacts to emergency response and evacuation procedures as a result of implementation of the Program Renewal. A full description of each BMP is provided in Chapter 2, *Project Description*, Table 2-10.

- **BMP GEN-35: Fire Prevention** would ensure that earth-moving and portable equipment contain spark arrestors, and work crews are equipped with the appropriate fire suppression equipment during the high fire danger period. Flammable materials would be kept away from equipment that could produce a spark, fire, or flame and also from portable power tools that would be powered by gasoline-fueled internal combustion engines.

- **BMP GEN-43: Public Outreach** will ensure that the public is informed about maintenance work. Valley Water will distribute notices and post signs in neighborhoods, provide notification to local governments (including local fire districts), and post information on Valley Water's website.
- **BMP GEN-44: Implement Public Safety Measures** will ensure that signage and/or temporary fencing are installed to help reduce impediments to traffic movement or evacuation routes in the case of an emergency, like a wildfire.
- **BMP GEN-46: Planning for Pedestrians, Traffic Flow, and Safety Measure** will ensure that traffic flow is maintained. If temporary lane closures are necessary or traffic flow is going to be affected, Valley Water will coordinate with the local emergency service providers to ensure that there is emergency vehicle access and that response times are not impeded.

Summary

As discussed in Section 3.15, "Wildfire," with implementation of relevant regulatory requirements and BMPs, impacts of Program Renewal related to wildfire would be less than significant. Although development projects anticipated in Table 4-1 and CIP projects identified in Table 4-2 may be implemented within the geographic scope of wildfire impacts, it is likely that those projects would be required to comply with or implement similar measures as the Program Renewal, based on local, state, and federal regulations and policies. Therefore, the Program Renewal would not contribute to a significant cumulative impact on wildfire. Based on the above analysis, cumulative impacts related to wildfire would be less than significant, and the Program Renewal would result in a less than cumulatively considerable incremental contribution to a significant cumulative impact related to wildfire. This cumulative impact would be less than significant.

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Chapter 5.
Alternatives Analysis

5.1 INTRODUCTION

This chapter describes alternatives to the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Program Renewal) and evaluates their environmental impacts. This alternatives analysis was developed to serve three regulatory purposes: (1) California Environmental Quality Act (CEQA) compliance; (2) National Environmental Policy Act (NEPA) compliance; and (3) Clean Water Act (CWA) Section 404(b)(1) permitting requirements. Although this Subsequent Environmental Impact Report (SEIR) addresses CEQA requirements, NEPA and 404(b)(1) environmental review activities for the Program Renewal will occur as part of the U.S. Army Corps of Engineers (USACE) permitting process. The analysis in this chapter is anticipated to be used by the USACE to develop its NEPA documentation and 404(b)(1) analyses.

A detailed description of the regulatory requirements for consideration of alternatives is provided in Section 5.2, "Regulatory Requirements." The chapter continues with a description of the alternatives development process and the Program Renewal's goals and objectives. Next, the chapter provides descriptions of the alternatives that were considered, discusses how each alternative would meet the Program Renewal's objectives, and evaluates impacts for each alternative by resource section. The chapter then describes the alternatives that were considered but dismissed from further evaluation and concludes with identification of the environmentally superior alternative.

5.2 REGULATORY REQUIREMENTS

5.2.1 CEQA/NEPA Requirements

CEQA requires that an environmental impact report (EIR), and NEPA requires that an environmental impact statement (EIS), evaluate a reasonable range of alternatives to the proposed action, including an alternative where no project would be implemented. Although no clear rule exists for determining a reasonable range, CEQA and NEPA provide guidance that can be used to define the range of alternatives for consideration in the environmental document. The range of alternatives under CEQA is governed by the rule of reason. Alternatives under CEQA must meet the basic project objectives, should reduce or eliminate one or more of the significant impacts of the project (although the alternative can have greater impacts overall), and must be potentially feasible. In determining whether alternatives are feasible, lead agencies are guided by the general definition of feasibility found in State CEQA Guidelines Section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." In accordance with CEQA Guidelines Section 15126.6(f), the lead agency must consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional

boundaries, and the proponent's control over alternative sites in determining the range of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the lead agency relied on in making the selection. It should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (CEQA Guidelines Section 15126[c]). These guidelines were used in developing the alternatives and their evaluation, as described below.

Under NEPA, the evaluation of alternatives also follows the rule of reason, ensuring that an EIS presents only those alternatives necessary for informed decision-making regarding the proposed action. The range of alternatives considered must be reasonable and based on the specific facts and circumstances of the project.

A No Action (NEPA)/No Project (CEQA) Alternative also is required to be considered. The No Action/No Project alternative allows decision makers to compare the impacts of approving the action against the impacts of not approving the action.

5.2.2 Clean Water Act Section 401(b)(1)

Under 40 CFR Part 230 Section 401(b)(1), discharge of dredged or fill material will not be permitted if a practicable alternative exists to the proposed discharge that will have a lesser adverse impact on the aquatic ecosystem. However, the alternative cannot have other significant adverse environmental consequences that are greater than that of the proposed discharge.

Because Program Renewal activities would be necessarily water-dependent, alternatives which would not involve a discharge of dredged or fill material into waters of the United States were not considered. Additionally, the Program Renewal Area is specifically defined, based on maintenance needs for the region's flood protection channels. Because the Program Renewal Area was determined by fundamental Stream Maintenance Program needs, this precluded consideration of alternative locations for discharges outside of the Program Renewal Area. An alternative is practicable if it is available and capable of being undertaken after taking into consideration cost, existing technology, and logistics in light of overall project purposes. For actions subject to NEPA, where the U.S. Army Corps of Engineers (USACE) is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental USACE NEPA documents, will in most cases provide the information for the evaluation of alternatives under the Section 401(b)(1) guidelines. On occasion, these NEPA documents may not have considered the alternatives in sufficient detail to respond to the requirements of the 401(b)(1) guidelines, and it may be necessary to supplement the NEPA documents with this additional information.

5.3 ALTERNATIVES DEVELOPMENT PROCESS

Alternatives to the Program Renewal were developed as programmatic alternatives for implementation of the Program Renewal and were informed by the Program Renewal's objectives as well as it's significant environmental impacts. Some of the alternatives considered would limit the extent of Program Renewal implementation by altering the frequency of maintenance activities or prohibiting maintenance activities from occurring on specific stream reaches. As a result, the programmatic alternatives would provide varying

levels of flood protection. Alternatives would seek to achieve similar objectives as the Program Renewal, although the alternatives may reach these objectives to a greater or lesser extent than the Program Renewal. The alternatives also would seek to reduce the significance of adverse environmental impacts associated with the Program Renewal. A reasonable range of alternatives is presented in Section 5.4, "Alternatives Considered," describing their potential impacts as well as benefits.

5.3.1 Program Renewal Goals and Objectives

As described in Chapter 2, *Project Description*, the overall goals of the Program Renewal are to maintain the flow conveyance capacity of Valley Water flood protection facilities to reduce flood risks and ensure public safety, and to maintain the structural and functional integrity of Valley Water flood protection facilities and lands. To meet these goals, Valley Water will implement the Program Renewal maintenance activities to achieve the following objectives:

- Remove the necessary sediment to provide flow conveyance and safety while maintaining habitat functions in creek systems;
- Manage vegetation for flow conveyance, for fire code compliance and to reduce the fire fuel loads and wildfire risk, and for public safety while maintaining the habitat functions and ecosystem health of creeks, channels, and other Valley Water facilities;
- Manage vegetation to allow levee inspections and access to maintenance work sites;
- Stabilize eroding stream and channel beds and banks to protect existing infrastructure, maintain public safety, reduce sediment loading, protect water quality, and protect habitat values; and
- Avoid, minimize, or mitigate impacts on the environment by identifying and prioritizing when maintenance work is necessary and incorporating stream stewardship measures to further reduce potential impacts and enhance ecologic function where possible.

5.4 ALTERNATIVES CONSIDERED

The following alternatives were considered because they would meet most of the Program Renewal objectives, would be feasible, and would avoid or substantially reduce one or more significant impacts of the Program Renewal:

- No Project Alternative
- Reduced Frequency Alternative
- Limited Work in Unmodified Channels Alternative
- Limited Activities Alternative

Table 5-1 provides a comparison of alternatives to the Program Renewal, focusing on notable changes in characteristics and adverse and beneficial impacts.

Table 5-1. Comparison of Alternatives to Program Renewal

Alternative	Changes in Characteristics	Adverse Impacts	Beneficial Impacts
No Project Alternative	• Either use of existing best management practices (BMPs) from SMP-2, or BMPs varying on a project-by-project basis • Uses current maintenance period; no extension • If project-by-project permits are sought, some maintenance may not occur in the year it was needed because of increased time and effort to conduct CEQA compliance and obtain permits annually • If project-by-project permits are sought, biological impacts would be mitigated annually instead of comprehensively	• If work could not be conducted in a timely manner because of permit constraints, potential failure to maintain the design flow, or appropriate conveyance capacity of facilities resulting from sediment accumulation • Various impacts could increase because existing SMP-2 BMPs may not be as protective as Program Renewal BMPs	• Slight reduction in annual impacts associated with Program Renewal activities if less annual maintenance would be conducted
Reduced Frequency Alternative	• Recurrence of sediment removal and vegetation management activities at any location would be half as frequent as under the Program Renewal • The amount of maintenance done during each event likely would need to be greater to fulfill maintenance needs	• Temporary failure to maintain the design flow or appropriate conveyance capacity of facilities between maintenance activities • Temporary increased fire risk on roads, levees, and within the riparian corridor • Various impacts likely to increase in intensity because larger maintenance events would occur	• Impacts of sediment removal and vegetation management would occur less frequently
Limited Work in Unmodified Channels Alternative	• Maintenance activities that could be done in unmodified channels would be limited to within 100 feet up- and downstream of human-made structures • Maintenance activities in unmodified channels located away from human-made structures would not occur	• Potential failure to maintain the design flow or appropriate conveyance capacity of facilities resulting from increased sediment accumulation in locations where no work was allowed • Potential adverse impacts to water quality from increased sediment accumulation because of bank failures in areas	• Potentially would reduce impacts to plant and animal species, riparian habitat, and wetlands in unmodified reaches • Various impacts would be reduced overall because less annual maintenance would be conducted

Alternative	Changes in Characteristics	Adverse Impacts	Beneficial Impacts
		where no work was allowed	
Limited Activities Alternative	• Only "soft" bank stabilization measures would be used; no hardscape would be allowed • Equipment for sediment removal would always be located at the top of the bank and would not be allowed in the stream channel • No herbicides would be used for vegetation management; only mechanical methods or hand removal would be utilized • No fumigants would be used for management of animal conflicts	• Potential failure to maintain the design flow or appropriate conveyance capacity of facilities resulting from the inability to remove sediment inaccessible from top of bank • Likely greater impacts to vegetation/habitat from trampling because of repeated hand or mechanized vegetation removal • Potential variety of new/or greater impacts related to alternative methods of implementing maintenance activities • Direct loss of riparian habitat and sediment discharges potentially resulting from repeated bank failures where soft methods were not sufficient • Non-native species and species densities likely to increase because of less effective control methods; longer term result would be a loss of native flora and conversion to higher density non-natives	• Potentially reduced impacts to water quality from eliminating the use of herbicides • Reduced instream impacts from not allowing large equipment in the channel for sediment removal • Increased ecological value at bank stabilization sites where soft measures were used successfully

Source: Data compiled by Horizon Water and Environment and Montrose Environmental Group in 2011 and 2024

5.4.1 No Project Alternative

Characteristics of this Alternative

Under the No Project Alternative, Valley Water would pursue one of two options: (1) continue conducting maintenance activities, including CEQA compliance and project-by-project permitting on an annual basis, following practices under the existing Stream Maintenance Program (SMP); or (2) seek to extend or renew existing SMP programmatic permits, following practices under the existing SMP and utilizing previous CEQA documentation. Valley Water would maintain its current maintenance activities under the existing SMP, following established operation and maintenance guidelines and BMPs, without incorporating the newly proposed Program Renewal measures. Valley Water would continue to implement mitigation measures from the SMP-2 EIR, as discussed in the impact analysis.

As described in Chapter 2, *Project Description*, some primary differences between this alternative and the Program Renewal are that the Program Renewal would include hazard tree management, the removal of trees greater than 12 inches diameter at breast height (dbh), additional minor maintenance work[1], updated work limits, and refinements to BMPs to reflect updated regulations and improved clarity. If project-by-project permitting was conducted under this alternative, the added maintenance activities, updated work limits and BMP modifications would be added on a project-by-project basis, as dictated by mitigation contained in CEQA compliance documents and the terms contained in annually renewed permits.

Under the No Project Alternative, Valley Water may need to complete CEQA compliance and secure permits each year, resulting in a more time-intensive and resource-demanding process compared to the streamlined, programmatic approach of the Program Renewal. Conducting CEQA reviews on an annual basis may also create challenges in accurately assessing the cumulative impacts of ongoing maintenance activities. Furthermore, due to the lead time needed to obtain regulatory permits, some needed maintenance likely would not be conducted during the same season as the need for it was identified, resulting in the potential for failure to stabilize eroding stream and channel beds, maintain the design flow or provide appropriate conveyance capacity of facilities, consequently not meeting the Program's objectives.

Therefore, it is likely that less maintenance work would be accomplished each year. If sediment removal were reduced under the No Project Alternative, related activities—such as excavation, hauling, disposal, and reuse—would also decline. This reduction could lessen environmental impacts by decreasing the need for bank stabilization and lowering the risk of culvert blow-outs typically linked to deeper excavation activities. However, the Program may fail to remove enough sediment to maintain flow conveyance and safety and therefore may not achieve the Program's objectives. If less vegetation management occurred, adequate flow conveyance through the channels could be compromised as well as public safety due to more of a possibility of flooding and wildfire risk. Additionally, under this alternative over the 10-year planning horizon (2027-2036), annual environmental compliance costs required for the No Project Alternative would be expected to be higher than the one-time compliance costs associated with the Program Renewal.

Impact Analysis

The type and nature of environmental impacts resulting from the No Project Alternative would be expected to be similar to those of the Program Renewal. However, if less maintenance work was completed each year, then maintenance activities would be performed at each reach less frequently and/or less work would be completed overall. As a result, impacts related to aesthetics, air quality, biological resources, cultural resources, energy, greenhouse gas emissions, hazards and hazardous materials, noise, public services and utilities, traffic and transportation, and tribal cultural resources would be slightly reduced. For instance, a longer period between maintenance activities would allow biological systems more time to restore ecological structure and function, resulting in somewhat

[1] New minor activities that will be included in the Program Renewal include trash boom maintenance, routine work at maintenance yards, floodwall maintenance (e.g., graffiti removal, addition of protective coatings, and periodic repairs to prevent erosion), maintenance of Palo Alto Flood Basin tide gates, maintenance of fish ladders that are not associated with a diversion, and maintenance of passive flood barriers.

reduced impacts to wetland and riparian habitats and other biological resources, when compared to the Program Renewal. To the extent that maintenance activities would improve ecological structure and function or remediate problems (for instance, bank stabilization to reduce sediment discharges to creeks), these benefits would not be realized to the same extent as under the Program Renewal.

If project-by-project permitting occurred, sediment discharges from areas requiring bank stabilization, combined with increased sediment accumulation resulting from the longer period between maintenance activities, would result in a greater temporary reduction in conveyance capacity than the Program Renewal. Consequently, the No Project Alternative would not be expected to maintain the design flow or appropriate conveyance capacity of facilities to the same extent as the Program Renewal. This would certainly be the case in channels that are included in the Program Renewal but not a part of the existing SMP.

If vegetation management activities needed to occur on a project-by-project permitting basis, the potential for wildlife risk increases. For example, less mowing would occur and the potential for a more rapid rate of spread of flammable invasive species would increase. Unlike the Program Renewal, the No Project Alternative would not include the removal of hazard trees over 12 inches dbh, potentially increasing safety risks and exacerbating wildfire hazards. Additionally, managing vegetation on a project-by-project basis could heighten flood risks by reducing maintenance frequency within the channel, which may compromise its capacity for effective flow conveyance. Continued use of the BMPs in the current SMP, to the extent they are not as protective as the BMPs proposed for the Program Renewal, may not reduce the impacts of maintenance to the same extent as under the Program Renewal. Furthermore, because Valley Water may not know what the mitigation requirements would be more than one year in advance, it might not be as ecologically beneficial to provide adequate mitigation for each smaller project. Because mitigation would be undertaken in smaller increments, the overall mitigation may be less ecologically significant than the comprehensive approach proposed in the Program Renewal, where maintenance projects are pooled together annually or over a longer timeframe for the purpose of identifying mitigation opportunities. The environmental impacts to each resource topic under the No Project Alternative are discussed in more detail below.

Aesthetics

Under the No Project Alternative, adverse effects on scenic vistas and scenic resources viewed from a state or county-designated scenic highway would be the same as they would be for the Program Renewal, which would be less than significant. Under the No Project Alternative, maintenance activities would take place within the same channel corridors as the Program Renewal, located between two and five miles from publicly accessible ridgeline trails and scenic viewpoints overlooking creeks and canals. As a result, these activities would likely remain out of sight from scenic vista viewpoints. Furthermore, SMP-2 BMPs GEN-19 (Work Site Housekeeping), REVEG-1 (Seeding), and REVEG-2 (Planting Material) would be implemented under the No Project Alternative which would further prevent maintenance activities from substantially degrading scenic resources along a waterway or altering views of surrounding hillsides (Impacts AES-1 and AES-2 in Section 3.2, “Aesthetics”).

Under the No Project Alternative, even with the implementation of SMP-2 Mitigation Measures BIO-1 (Compensatory Mitigation for Wetlands and Other Waters), BIO-2 (Compensatory Mitigation for Woody Riparian Vegetation), and BIO-7 (Tree Replacement),

as well as BMPs for work site housekeeping, seeding, and planting materials, impacts on visual character and quality would be significant and unavoidable. This is primarily due to potential tree removal in areas where revegetation may not be feasible. Under the Program Renewal, removing hazard trees—those dead, dying, or unstable—would have a less-than-significant impact on aesthetics and require no mitigation. These removals, essential for safety and infrastructure stability, may also improve the overall visual landscape. While the removal of healthy trees could affect the riparian corridor, strict limits, including annual and 10-year caps and a 20% canopy removal threshold per reach, would help minimize the impact. Additionally, the implementation of SMP-2 BMPs under the Program Renewal would regulate the staging and stockpiling of materials, prevent downstream scour from sediment removal, restore channel features, and minimize erosion caused by in-channel vegetation removal, seeding, and planting activities, further reducing this impact (Impact AES-3 in Section 3.2, "Aesthetics").

Like the Program Renewal, the No Project Alternative would focus on maintaining existing public infrastructure to ensure facilities are operating properly and would not conflict with zoning or scenic quality regulations, nor introduce new sources of light and glare. As a result, it would have a less-than-significant impact on scenic quality and no impact related to light and glare (Impacts AES-4 and AES-5 in Section 3.2, "Aesthetics").

Overall, the impacts of the No Project Alternative on aesthetics would be increased compared to those of the Program Renewal.

Air Quality

In the 2012 Stream Maintenance Program EIR (SMP-2), emissions of reactive organic gases (ROG), nitrous oxides (NO_x), and particular matter (PM10, PM2.5) from maintenance activities were found to result in either less-than-significant impacts with mitigation or significant and unavoidable impacts due to potentially infeasible mitigation measures. Since then, advancements in equipment efficiency and emissions controls have reduced emissions for the current SMP-2 operations.

Under the No Project Alternative, air quality impacts related to potential conflicts with applicable air quality plans, including the Bay Area Air District's 2017 Bay Area Clean Air Plan, would be similar to those of the Program Renewal and would remain less than significant (Impact AIR-1, Section 3.2, "Air Quality"). While the Program Renewal includes more robust, program-wide measures, the No Project Alternative would still adhere to existing regulations and local general plans that aim to reduce emissions of criteria pollutants and toxic air contaminants. These plans commonly reference consistency with the Bay Area Air District's air quality strategies, and the No Project Alternative, despite relying on existing SMP-2 BMPs or project-specific permitting approaches, would not obstruct or hinder implementation of any of the Bay Area Clean Air Plan's control measures. As a result, while the No Project Alternative may not advance air quality goals as proactively or consistently as the Program Renewal, it would not conflict with or obstruct implementation of applicable air quality plans and policies.

Under both the Program Renewal and the No Project Alternative, short-term use of heavy equipment for maintenance activities would generate similar types of emissions, including criteria air pollutants and odors. Under the No Project Alternative, emissions would be slightly lower than under the Program Renewal due to fewer daily vehicle trips, reduced off-

road equipment use, and limited vegetation management. However, the difference would not be substantial, particularly as older, higher-emission vehicles are gradually replaced with cleaner or alternative-fuel models. This would be a less-than-significant impact (Impact AIR-2 in Section 3.2, "Air Quality").

Impacts related to diesel particulate matter (DPM) and toxic air contaminants (TAC) health risks and objectionable odors would be comparable under both scenarios and remain less than significant (Impacts AIR-3 and AIR-4 in Section 3.2, "Air Quality").

Overall, the impacts of the No Project Alternative on air quality would be slightly reduced compared to those of the Program Renewal.

Biological Resources

Under the No Project Alternative, a longer period between maintenance activities would allow biological systems more time to restore ecological structure and function, and less trees would be removed, resulting in somewhat reduced impacts to special-status species, riparian habitat, sensitive natural communities, and wetlands compared to the Program Renewal; however, impacts would remain less than significant with implementation of SMP-2 Mitigation Measures BIO-1 (Compensatory Mitigation for Wetlands and Other Waters), BIO-2 (Compensatory Mitigation for Woody Riparian Vegetation), BIO-3 (Compensatory Mitigation for Serpentine Communities), BIO-4 (Compensatory Mitigation for Serpentine-Associated Special-Status Plan Species), BIO-5 (Compensatory Mitigation for Impacts to Non-Serpentine Special-Status Plant Species), BIO-6 (Compensatory Mitigation for Impacts to Serpentine-Associated Special-Status Invertebrates), BIO-7 (Tree Replacement), BIO-8 (Augmentation of Spawning Gravel), BIO-9 (Augmentation of Instream Complexity for Non-Tidal Stream Fish), BIO-10 (Compensatory Mitigation for California Tiger Salamander), BIO-11 (Compensatory Mitigation for California Red-Legged Frog), BIO-12 (Compensatory Mitigation for the Least Bell's Vireo), BIO-13 (Compensatory Mitigation for the Burrowing Owl), BIO-14 (Compensatory Mitigation for the Yellow Warbler), BIO-15 (Provide Alternative Bat Roost), and BIO-16 (Invasive Species Management) (Impacts BIO-1, BIO-2, and BIO-3 in Section 3.4, "Biological Resources").

Impacts to nesting birds would remain similar under the No Project Alternative compared to the Program Renewal. Specifically, impacts to nursery sites for herons (heron rookeries) would remain significant and unavoidable under the No Project Alternative due to the potential abandonment of a nesting colony, or a substantial decline in the number of herons and/or egrets using the colony from implementation of Program activities (Impact BIO-4 in Section 3.4, "Biological Resources").

Lastly, similar to the Program Renewal, the No Project Alternative would not include any activities that would conflict with local policies and ordinances protecting biological resources, habitat conservation plans, and natural community conservation plans and impacts would be less than significant (Impacts BIO-5 and BIO-6 in Section 3.4, "Biological Resources").

Overall, the impacts of the No Project Alternative on biological resources would be slightly reduced compared to those of the Program Renewal.

Cultural and Paleontological Resources

Under the No Project Alternative, impacts to cultural resources would be slightly less compared to what they would be under the Program Renewal, due to less ground disturbing activities occurring. However, even at a reduced frequency, ground disturbing maintenance activities would have the potential to impact known and previously undiscovered archaeological or historical resources and paleontological resources (Impacts CR-1 and CR-3 in Section 3.5, "Cultural and Paleontological Resources") since work would be conducted in the same general areas as the Program Renewal. This would still be a less-than-significant impact. The No Project Alternative would also have the same potential to unearth human remains as the Program Renewal, which would be a less-than-significant impact (Impact CR-2 in Section 3.5, "Cultural and Paleontological Resources").

Overall, the impacts of the No Project Alternative on cultural and paleontological resources would be substantially similar to those of the Program Renewal.

Energy

Under the No Project Alternative, maintenance activities and associated vehicle trips would likely be less frequent than under the Program Renewal. While this could lead to slightly reduced energy use, overall consumption would remain comparable, as Valley Water would continue to incorporate more energy-efficient equipment over time. As a result, the No Project Alternative would not lead to wasteful, inefficient, or unnecessary energy use, and impacts would be slightly reduced but still less than significant—similar to those under the Program Renewal (Impact ENE-1, Section 3.7, "Energy").

Neither the Program Renewal nor the No Project Alternative would conflict with or impede any state or local plans for renewable energy or energy efficiency (Impact ENE-2, Section 3.7, "Energy").

Overall, energy-related impacts under both the No Project Alternative and the Program Renewal would be substantially similar.

Greenhouse Gas Emissions

At the time of preparation of the 2012 SMP-2 EIR, Valley Water was unable to commit to mitigation measures (Mitigation Measures GCC-1A [On-site or Off-site GHG Emissions Mitigation Program] and GCC-1B [GHG Emissions Offsets]) to help lower the production of GHGs (greenhouse gases) as they were determined to be infeasible due to cost, logistical, and implementation challenges. As a result, the impact of SMP-2 with regards to the creation of GHGs was found to be significant and unavoidable. Since then, advancements in technology, stricter regulations, and a better overall understanding of GHG reduction strategies have allowed Valley Water to better mitigate the production of GHGs.

Under the No Project Alternative, annual GHG emissions would likely remain at levels similar to those under the existing SMP-2, as maintenance activities would continue but without the expanded work windows or increased frequency proposed under the Program Renewal. However, unlike the Program Renewal, the No Project Alternative would not include updated, program-wide mitigation measures such as GHG-1 (GHG Emissions Reduction Practices for Maintenance Activities) and GHG-2 (GHG Emissions Mitigation Program), which require the use of low-emission equipment, enforce contractor emission limits, and offset excess

emissions through verified carbon credits. As a result, while total GHG emissions under the No Project Alternative might be slightly lower due to reduced activity, the lack of a consistent, enforceable framework for reducing and offsetting emissions would limit its effectiveness in supporting long-term regional GHG reduction goals. This impact would be potentially significant compared to that of the Program Renewal (Impact GHG-1, Section 3.7, "Greenhouse Gases").

Under the No Project Alternative, while fewer activities might reduce annual emissions, this alternative lacks the formal mitigation framework (e.g., Mitigation Measures GHG-1 and GHG-2) and BMPs included in the Program Renewal that are specifically designed to offset or reduce emissions. However, Valley Water has already made progress toward electrification and the use of alternative fuel vehicles and equipment, and this trend is expected to continue regardless of the selected alternative. As such, GHG emissions under the No Project Alternative would not significantly conflict with the reduction goals of SB 32, AB 1279, or California's 2022 Scoping Plan, particularly given the reduced scale of activities and ongoing technological improvements. While the No Project Alternative does not include the same level of formal commitment to offset emissions, it would not obstruct implementation of applicable GHG reduction plans, and impacts would be less than significant (Impact GHG-2, Section 3.7, "Greenhouse Gases").

Despite generating more GHG emissions on an annual basis, the Program Renewal provides an effective and feasible strategy for managing and mitigating those emissions in compliance with CEQA and regional climate goals. Therefore, the No Project Alternative would have an impact that is substantially similar to that of the Program Renewal.

Hazards and Hazardous Materials

Under the No Project Alternative, routine maintenance activities would continue with some existing BMPs in place, including those outlined in SMP-2, such as BMPs for hazardous materials management, spill prevention, and public safety measures. These include BMP GEN-2 (Instream Herbicide Application Work Window), BMP GEN-19 (Work Site Housekeeping), and BMP GEN-24 (On-Site Hazardous Materials Management), among others.

The No Project Alternative would have a significant and unavoidable impact on the use, transport, or accidental release of hazardous materials. In contrast, the Program Renewal was determined to have a less-than-significant impact with the implementation of Mitigation Measure HAZ-1 (Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever). This measure mandates dust control practices during ground-disturbing activities with mechanized heavy equipment in areas containing NOA, minimizing the risk of airborne hazards (Impact HAZ-1, Section 3.8, "Hazards and Hazardous Materials").

Contamination from unknown sources, such as pollutants from stormwater runoff, illegal dumping, or unhoused discharges, could persist under the No Project Alternative. While BMPs such as BMP GEN-25 (Existing Hazardous Materials) and BMP GEN-21 (Staging and Stockpiling of Materials) would address some of these risks, the lack of systematic contamination testing, and more proactive mitigation measures could allow potential environmental harm to continue. Additionally, the risk of disruptions to emergency access and evacuation routes due to lane closures or work site congestion could still occur under the No Project Alternative, despite BMPs like BMP GEN-39 (Planning for Pedestrians, Traffic

Flow, and Safety Measures) designed to reduce such impacts (Impact HAZ-2, Section 3.8, "Hazards and Hazardous Materials").

Under the No Project Alternative, Valley Water would continue maintenance under SMP-2 or on a project-specific basis, with reduced frequency but still involving ground disturbance near known contaminated sites. Of the 563 active hazardous sites in Santa Clara County, 48 are within 1,500 feet of Program Renewal channels. Without the structured planning and updated BMPs of the Program Renewal, the risk of disturbing these sites would be slightly higher. However, existing regulations like the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) would still apply. Mercury contamination in the Guadalupe River would also remain a concern but could still be managed case by case. Overall, the risk would remain less than significant, though slightly greater than under the Program Renewal (Impact HAZ-3, Section 3.8, "Hazards and Hazardous Materials").

Under the No Project Alternative, Valley Water would continue maintenance under SMP-2 or on a project-specific basis. While activities would likely be reduced, ground disturbance from sediment removal, bank stabilization, or vegetation management could still expose previously unknown contamination from illegal dumping or stormwater pollutants. Unlike the Program Renewal, this alternative has less comprehensive protections, increasing the risk of encountering hazardous materials. However, existing state and federal regulations, including the California Division of Occupational Safety and Health (Cal/OSHA) standards, would still apply, and Valley Water could implement safety measures as needed. Thus, while the potential for exposing unknown contamination would be slightly higher than under the Program Renewal, impacts would remain less than significant (Impact HAZ-4, Section 3.8, "Hazards and Hazardous Materials").

The presence of BMPs like BMP GEN-24 (On-Site Hazardous Materials Management) and BMP GEN-32 (Vehicle and Equipment Fueling) would reduce the risks of hazardous materials exposure, but activities near sensitive receptors, such as schools, would still expose them to potential risks from diesel emissions, NOA, and Valley Fever (Impact HAZ-5, Section 3.8, "Hazards and Hazardous Materials"). While BMPs such as BMP HM-4 (Posting and Notification for Pesticide Use) would provide notification of pesticide use, other risks would remain heightened without the full scope of mitigation measures available under the Program Renewal.

In the long term, while some BMPs would help mitigate risks, the No Project Alternative would still likely result in greater environmental harm compared to the Program Renewal. The absence of comprehensive planning and additional BMPs would leave unaddressed contamination risks, particularly in areas near storm drain outfalls, as well as the increased potential for Valley Fever exposure due to lack of thorough dust control measures (Impact HAZ-6, Section 3.8, "Hazards and Hazardous Materials").

Ultimately, while the No Project Alternative would involve some protective measures, it would fall short of achieving the environmental protections and long-term benefits provided under the Program Renewal.

Hydrology and Geomorphology

Under the No Project Alternative, some maintenance activities, such as sediment and vegetation removal, would likely not be conducted during the same season as the need for it was identified, which may result in accumulation of sediment and siltation and vegetation overgrowth in the creek channels and could reduce groundwater recharge in the short term. If there are delays in implementing bank stabilization measures, there could potentially be a short-term increase in erosion of stream and channel beds and siltation, which could alter drainage patterns. If less vegetation management occurred, adequate flow conveyance through the channels could be compromised, resulting in the possibility of more flooding. However, in the long term, removal of vegetation and sediment, and implementation of bank stabilization measures would help maintain flow conveyance and would not substantially affect groundwater supplies or recharge, and there would not be an impedance of sustainable management of the ground water basin; impacts would be similar to impacts under the Program Renewal. (Impacts HYD/GM-1 and HYD/GM-2[i], Section 3.9, "Hydrology and Geomorphology").

Additionally, like the Program Renewal, the No Project Alternative would not result in a substantial increase in the amount of surface runoff that would increase flooding on-or off-site since maintenance activities would reduce the potential for flooding by improving drainage and flow of runoff to downstream areas in the long term (Impact HYD/GM-2(ii), Section 3.9, "Hydrology and Geomorphology").

Similar to the Program Renewal, the No Project Alternative would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems and would restore flood conveyance by removing accumulated materials (Impacts HYD/GM-2[iii] and HYD/GM-2[iv], Section 3.9, "Hydrology and Geomorphology"). Although the No Project Alternative may have potential to result in impacts to hydrology and geomorphology, with implementation of BMPs, they would likely not result in more severe or new impacts in the long term than the Program Renewal and impacts would be less than significant.

Under the No Project Alternative, Valley Water's ongoing, though less frequent, maintenance activities would not conflict with or obstruct implementation of Valley Water's Groundwater Management Plan (GWMP). Groundwater use would remain minimal, recharge impacts would be negligible, and existing monitoring and management strategies would continue. Overall, this alternative would not hinder GWMP goals, and impacts would remain less than significant (Impact HYD/GM-3, Section 3.9, "Hydrology and Geomorphology").

Overall, the impacts of the No Project Alternative on hydrology and geomorphology would be slightly increased but substantially comparable to those of the Program Renewal.

Noise

Under the No Project Alternative, routine maintenance activities would continue with some BMPs in place, such as noise mitigation measures outlined in SMP-2. However, without the more structured planning and mitigation measures proposed in the Program Renewal, the No Project Alternative would result in increased risks and noise exposure for sensitive receptors near the maintenance areas.

While some BMPs under the No Project Alternative, including BMPs GEN-43 (Public Outreach) and GEN-45 (Minimize Noise Disturbances to Residential Areas), would help reduce public disturbance, noise impacts would still occur. Heavy machinery such as bulldozers, excavators, dump trucks, and cranes used in maintenance activities would expose sensitive receptors to increased noise levels, especially near residential areas, schools, or other sensitive land uses. Noise levels from equipment such as excavators or chainsaws could easily exceed local noise standards, particularly during sediment removal and bank stabilization activities. For instance, during sediment removal, equipment operating 50 feet from a residential area could generate noise levels up to 76 A-weighted decibels (dBA), which is above the residential noise standard of 65 dBA. Vegetation management, including the use of mowers, chainsaws, and other equipment, could generate noise levels ranging from 65-75 dBA, further increasing the potential for disturbance in nearby sensitive areas.

Bank stabilization activities, especially those involving pile driving, could cause significant noise exposure. Impact pile driving, the noisiest method, could generate noise levels between 88 and 101 dBA at a distance of 50 feet, potentially disturbing nearby receptors for up to two days. Given the proximity of sensitive receptors to maintenance activities, temporary increases in noise levels could exceed the local standards for construction equipment, leading to significant and unavoidable impacts (Impact NZ-1, Section 3.10, “Noise”).

The No Project Alternative would also face challenges with noise mitigation effectiveness. Although BMPs like noise barriers and quieter equipment options are included, these measures may not fully alleviate the significant noise impacts, particularly in sensitive areas, and would likely result in more frequent and disruptive noise events. Even with BMPs and mitigation, such as BMP GEN-45 (Minimize Noise Disturbances to Residential Areas) for noise reduction, temporary increases in noise levels are expected to remain significant and unavoidable, especially as related to ground vibration or ground-borne noise levels (Impact NZ-2, Section 3.10, “Noise”).

Similar to the Program Renewal, the No Project Alternative would have no impact with regards to introducing new noise-sensitive land uses or receptors in proximity to a private airstrip, within an airport land use plan, or within two miles of a public airport, resulting in no impact (Impact NZ-3, Section 3.10, “Noise”).

In conclusion, while the No Project Alternative includes some noise management BMPs, the absence of a comprehensive mitigation strategy would result in significant noise impacts to nearby sensitive receptors, especially during activities like sediment removal, vegetation management, and bank stabilization. The lack of more stringent noise controls and extended operating hours in the Program Renewal means that these impacts would be more frequent and harder to mitigate. Therefore, temporary noise increases under the No Project Alternative would still result in significant and unavoidable impacts.

Public Services and Utilities

Similar to the Program Renewal, the No Project Alternative would not involve the construction of any developments or involve any long-term activities that would result in an increased demand for public services, such as police, fire, parks, or schools that would require new or physically altered public service facilities. Although maintenance activities could result in short-term effects to fire or police services like they would under the Program

Renewal (Impact PSU-1, Section 3.11, "Public Services and Utilities"), impacts on public services would be less than significant with implementation of BMPs.

Like the Program Renewal, the No Project Alternative would not cause the need for relocated, new, or expanded utilities or service system facilities. There could potential be disruptions to utilities or service systems if activities accidentally damaged or interrupted the utilities' distribution or transmission systems. Due to the implementation of BMPs, impacts to existing utilities would be the same as they would be for the Program Renewal, which would be less than significant (Impact PSU-2, Section 3.11, "Public Services and Utilities").

Similar to the Program Renewal, the No Project Alternative would not involve the construction of any new or expanded housing or other occupied buildings that would require the expansion of water or wastewater systems or new water and wastewater facilities. Small quantities of wastewater would be generated from portable restrooms, hand washing stations, grazing, dust control, irrigation, and vehicle cleaning. Like the Program Renewal, sufficient water supplies would be available for the Program Renewal and impacts would be less than significant (Impact PSU-3, Section 3.11, "Public Services and Utilities").

Under the No Project Alternative, there may be a change in the amount of sediment and material waste requiring disposal at landfills that would differ from the Program Renewal amounts; however, similar to the Program Renewal, the No Project Alternative would not be anticipated to generate solid waste in excess of local standards or exceed remaining capacity of local landfills (Impact PSU-4, Section 3.11, "Public Services and Utilities").

Overall, the impacts of the No Project Alternative on public services and utilities would be substantially similar to those of the Program Renewal.

Traffic and Transportation

Under the No Project Alternative, trip generation estimates, and vehicle miles traveled (VMT) estimates may be different than those under the Program Renewal.

Under the No Project Alternative, Valley Water would continue maintenance under SMP-2 or through project-specific permits. Like the Program Renewal, these activities could temporarily impact bicycle and pedestrian circulation—such as lane or sidewalk closures—or conflict with planned or existing bike and pedestrian systems. Temporary disruptions may also reduce access to bicycle parking or Americans with Disabilities Act (ADA)-compliant routes. However, without the updated BMPs included in the Program Renewal—like coordinated public outreach, signage, and traffic flow planning—impacts to circulation could be less consistently managed. Still, existing traffic and public safety regulations would apply, and Valley Water could implement measures on a case-by-case basis to reduce effects. Therefore, impacts to the circulation system under the No Project Alternative would be less than significant, though potentially slightly more disruptive than under the Program Renewal (Impact TRA-1, Section 3.12, "Traffic and Transportation").

Under the No Project Alternative, Valley Water would continue maintenance activities under SMP-2 or on a project-specific basis. As described in the baseline analysis, SMP-2 operations currently generate approximately 39,270 one-way light- and medium-duty vehicle trips and 8,568 one-way heavy-duty truck trips annually, resulting in roughly 770,192 VMT per year. Because the No Project Alternative represents a continuation of current practices without

expansion of service area or significant changes in operations, it would not result in an increase in vehicle trips or VMT compared to existing conditions. Therefore, similar to the Program Renewal, this alternative would not conflict with CEQA Guidelines Section 15064.3(b) related to VMT. The No Project Alternative would maintain current VMT levels and vehicle trip frequencies, resulting in less than significant impacts with respect to VMT. No mitigation would be required (Impact TRA-2, Section 3.12, "Traffic and Transportation").

Under the No Project Alternative, Valley Water would continue conducting maintenance activities under SMP-2 or on a project-specific basis. These activities would still involve the use and temporary storage of heavy equipment, vehicles, and materials near work sites, which could require occasional lane closures—similar to those anticipated under the Program Renewal. As with the Program Renewal, these closures would be temporary and localized but could briefly hinder emergency response or evacuation routes. However, existing practices under SMP-2 already include basic coordination with local jurisdictions and emergency service providers to maintain emergency access. Without the enhanced BMP framework proposed under the Program Renewal, there may be a slightly higher risk of temporary disruption to emergency services under the No Project Alternative due to less formalized public outreach and coordination procedures. While emergency access could be temporarily impacted by maintenance activities under the No Project Alternative, these effects would be short-term, and existing coordination with emergency services would help maintain access. As such, the impact on emergency access would remain less than significant, though potentially slightly greater than under the Program Renewal due to the absence of updated BMPs (Impact TRA-3, Section 3.12, "Traffic and Transportation").

Overall, the No Project Alternative would have slightly worse impacts on traffic and transportation compared to the Program Renewal.

Tribal Cultural Resources

Under the No Project Alternative, ground-disturbing maintenance activities would still have the potential to affect known or previously undiscovered tribal cultural resources, such as archaeological sites, human remains, and cultural landscapes. Existing BMPs from SMP-2 such as BMP GEN-40 (Discovery of Cultural Remains or Historic or Paleontological Artifacts) and BMP GEN-41 (Review of Projects with Native Soil), as well as project-specific BMPs, would still be used. However, the more comprehensive and specific BMPs proposed under the Program Renewal, such as BMP GEN-47 (Minimize Impacts to Inadvertently Discovered Cultural Resources), GMP GEN-49 (Discovery of Human Remains), and BMP GEN-50 (Review of Projects with Native Soil) would not be implemented. These newer BMPs include clearer procedures and stricter requirements that offer stronger protection for tribal cultural resources. As a result, even with fewer maintenance activities under the No Project Alternative, the lack of these enhanced protections would slightly increase the risk of impacts, making overall effects on tribal cultural resources slightly greater than under the Program Renewal (Impact TCR-1, Section 3.13, "Tribal Cultural Resources").

Therefore, the No Project Alternative would result in slightly increased impacts to tribal cultural resources compared to the Program Renewal, although still less than significant.

Water Quality

Under the No Project Alternative, maintenance would continue with existing BMPs and schedules, but permit delays could reduce effectiveness, leading to sediment buildup and

diminished flood control. Ground-disturbing activities like sediment removal and vegetation management would still pose risks to water quality, including erosion, turbidity, and pollutant exposure. Without the advanced diversion systems and more robust BMPs proposed under the Program Renewal, the ability to control water flow and prevent contamination would be reduced. Hazardous materials from equipment and less controlled pesticide use would also increase the risk of water quality degradation. Furthermore, without enhanced sediment removal aligned with total maximum daily loads (TMDLs), contaminants like mercury and polychlorinated biphenyls (PCBs) may not be adequately addressed. Although existing BMPs and regulations such as RCRA would help reduce potential impacts, the overall risk of water quality degradation under the No Project Alternative would be slightly greater than under the Program Renewal, though it would still be considered less than significant (Impact WQ-1, Section 3.14, "Water Quality").

Under the No Project Alternative, Valley Water would continue maintenance activities using current methods and BMPs. However, without the enhanced protections of the Program Renewal, there would be an increased risk of groundwater contamination from activities like sediment removal, pesticide use, and hazardous materials handling. While existing BMPs and regulations (e.g., RCRA, Federal Insecticide, Fungicide, and Rodenticide Act [FIFRA]) provide some safeguards, they are less effective than the comprehensive strategies proposed under the Program Renewal. As a result, the potential for groundwater quality impacts would be higher, though still reduced to some extent. Overall, impacts to groundwater quality would be greater under the No Project Alternative but are expected to remain less than significant. (Impact WQ-2, Section 3.14, "Water Quality").

Under the No Project Alternative, maintenance activities would continue without creating new impervious surfaces or increasing stormwater runoff volumes, but the lack of enhanced BMPs as proposed under the Program Renewal would lead to a higher risk of polluted runoff. Activities involving hazardous materials and herbicides, along with sediment disturbance, could result in spills or contamination that, during rainfall, may enter nearby waterbodies. While some standard BMPs and existing regulations would still help mitigate these risks, they would be less effective than the comprehensive measures under the Program Renewal. As a result, the potential for water quality degradation from polluted runoff would be greater under the No Project Alternative, although still less than significant (Impact WQ-3, Section 3.14, "Water Quality").

Under the No Project Alternative, maintenance activities would still occur within flood hazard zones, near reservoirs, or in limited cases near the San Francisco Bay shoreline, exposing them to potential flood, tsunami, or seiche events. Without the enhanced BMPs of the Program Renewal, there would be a greater risk of pollutant release—such as fuel, oil, or herbicides—during such natural events, particularly if maintenance activities coincide with flood season. Although some standard BMPs and regulations would still help reduce these risks, they would not offer the same level of protection as the more robust measures proposed in the Program Renewal. Furthermore, without sediment removal and vegetation management to maintain channel conveyance capacity, the risk of future flooding and associated pollutant release would remain higher under the No Project Alternative. Consequently, the potential for pollutant release due to inundation would be greater, and long-term flood resilience would be reduced compared to conditions under the Program Renewal (Impact WQ-4, Section 3.14, "Water Quality").

As mentioned above, under the No Project Alternative, maintenance would proceed without the full suite of BMPs, mitigation measures, and regulatory safeguards provided by the Program Renewal. As a result, there would be a greater potential for both short- and long-term water quality impacts from activities like ground disturbance, sediment handling, and hazardous materials use. Without these controls, the likelihood of conflicting with or obstructing implementation of the San Francisco Bay and Central Coast Basin Plans would increase—particularly in regard to protecting beneficial uses such as cold freshwater habitat (COLD), migration (MIGR), and spawning (SPWN).

Unmitigated impacts, including vegetation removal, bank destabilization, and pollutant discharges, could violate water quality objectives or worsen existing impairments addressed by regional TMDLs (e.g., mercury, PCBs). In contrast to the Program Renewal, the No Project Alternative would lack systematic protections under permits like the National Pollutant Discharge Elimination System (NPDES) Aquatic Pesticide General Permit and would forgo opportunities for long-term improvements such as increased trash and sediment removal and flood risk reduction. Consequently, this alternative would pose a higher risk of regulatory noncompliance and result in fewer benefits to water quality and ecological function. (Impact WQ-5, Section 3.14, "Water Quality").

Overall, the No Project Alternative would have worse impacts on water quality compared to the Program Renewal.

Wildfire

Under the No Project Alternative, wildfire-related impacts could increase compared to the Program Renewal due to less comprehensive BMP implementation and potential delays in maintenance. While existing SMP-2 BMPs or project-specific BMPs would still be used, they may be less protective than those proposed under the Program Renewal.

Activities involving heavy equipment—such as sediment removal, vegetation management, tree removal, and bank stabilization—could still temporarily disrupt traffic and interfere with emergency response or evacuation efforts, including during wildfire events. The No Project Alternative would not include implementation of comprehensive BMPs such as GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures), which are aimed to help ensure that traffic disruptions are minimized, and emergency access is maintained through advance notification, staging plans, and coordination with relevant agencies, reducing the effectiveness of traffic control and emergency planning during maintenance operations. This could result in uncoordinated road or lane closures, delayed emergency response, and increased public safety risks during wildfire events or other emergencies. (Impact WF-1, Section 3.15, "Wildfire").

Under the No Project Alternative, maintenance activities would follow the current schedule, but if project-by-project permits are required, delays in CEQA compliance and permitting could prevent timely maintenance, especially during fire-prone seasons. This could result in excessive buildup of dry vegetation and sediment, increasing the risk of wildfire ignition, fire spread, and flooding or landslides linked to inadequate channel capacity (Impacts WF-2 through WF-4, Section 3.15, "Wildfire"). Although fewer overall maintenance activities may slightly reduce some direct impacts, the reduced frequency and timeliness of maintenance would limit Valley Water's ability to manage fire fuel loads effectively and maintain safe

access to facilities. Without the benefit of enhanced BMPs like GEN-35 (Fire Prevention) and the streamlined approach of the Program Renewal, the No Project Alternative would offer less fire risk mitigation and emergency preparedness. Consequently, wildfire-related impacts under this alternative could be greater and potentially significant, especially if key infrastructure cannot be maintained promptly due to permitting constraints.

Overall, the impacts of the No Project Alternative on wildfire would be increased compared to those of the Program Renewal.

5.4.2 Reduced Frequency Alternative

Characteristics of this Alternative

Under the Reduced Frequency Alternative, the types of maintenance activities undertaken by Valley Water would not change, but the recurrence of sediment removal and vegetation management activities would occur less frequently than under the Program Renewal. However, bank stabilization, management of animal conflicts, and minor maintenance activities would continue to occur as needed. All other aspects of the Program Renewal (e.g., new/revised BMPs) would be implemented under this alternative.

Under the Program Renewal, the recurrence of activities is projected for a 10-year period and would be influenced by a variety of factors, including the type of maintenance activity, where that activity would occur (e.g., levee or bank; unmodified channel), and the site-specific factors at a particular location (e.g., rate of sediment accumulation or vegetation growth). The need for sediment removal or instream vegetation management typically would be based on field observations of reduced channel capacity from sediment accumulation or vegetation growth; non-instream vegetation management would be based on managing annual growth, including the removal of vegetation using both pre-emergent and post-emergent herbicides. Under the Reduced Frequency Alternative, the recurrence of sediment removal and vegetation management activities at any particular location would be half as frequent as under the Program Renewal. For example, if a stream reach was projected in the Program Renewal to need sediment removed in 4 out of 10 years, under the Reduced Frequency Alternative, sediment would be removed in 2 out of 10 years.

Although maintenance activities would occur less frequently, the amount of maintenance done during each event likely would need to be greater to fulfill maintenance needs. For instance, a greater amount of sediment removal or instream vegetation management would need to occur during a maintenance event to maintain the design flood flow conveyance capacity during the longer periods between maintenance episodes. A greater amount of non-instream vegetation management also would need to occur during a maintenance event to address fire hazards on roads and levees associated with a greater amount of vegetation growth. Similarly, different types of maintenance may be necessary (e.g., removal of larger trees may require larger equipment).

Impact Analysis

The type and nature of environmental impacts resulting from the Reduced Frequency Alternative is expected to be very similar to those of the Program Renewal. Compared to the Program Renewal, impacts theoretically would be reduced because maintenance events would occur less frequently; however, this could be balanced out by the heightened intensity

and potentially expanded scope of work linked to the less frequent but more extreme maintenance activities. The frequency and intensity of maintenance events would affect impacts related to aesthetics, air quality, biological resources, cultural resources, noise, recreation, traffic, geomorphology, and water quality. For instance, the longer period between maintenance activities would allow biological systems more time to restore ecological structure and function, resulting in somewhat reduced impacts to wetland and riparian habitats and other biological resources, when compared to the Program Renewal. To the extent that maintenance activities support or improve ecological structure and function (for instance, create conditions unfavorable to invasive exotic species), these benefits would not be realized to the same extent as under the Program Renewal.

Increased sediment accumulation and instream vegetation caused by the longer period between maintenance activities would result in a greater temporary reduction in conveyance capacity, and thus a reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities, than under the Program Renewal. However, because larger maintenance events would occur, flood flow conveyance capacity would be retained over the long term. Increased non-instream vegetation growth caused by the longer period between maintenance activities would result in greater temporary fire hazards on roads and levees than under the Program Renewal. Local fire code requirements would not be able to be met annually.

The environmental impacts to each resource topic under the Reduced Frequency Alternative are discussed in more detail below.

Aesthetics

Under the Reduced Frequency Alternative, impacts on scenic vistas, visual character, and overall aesthetic quality would remain comparable to those under the Program Renewal. Maintenance activities under both the Program Renewal and Reduced Frequency Alternative would occur within the same channel corridors, which are generally not visible from designated scenic viewpoints. While the Reduced Frequency Alternative would involve less frequent removal of debris and overgrown vegetation, this would not result in substantial visual degradation of project sites or surrounding areas (Impacts AES-1 and AES-3, Section 3.2, “Aesthetics”).

The Reduced Frequency Alternative would likely result in fewer impacts on scenic resources (Impact AES-2, Section 3.2, “Aesthetics”) because of less frequent maintenance activities and a reduced need to remove mature, healthy trees that contribute to visual quality. Although this alternative would include the same mitigation measures as the Program Renewal (e.g., Mitigation Measure BIO-12 [Compensatory Mitigation for Impacts to Woody Riparian Vegetation]), its limited scope of work would inherently reduce the potential for visual disturbance, keeping impacts less than significant with mitigation.

The Reduced Frequency Alternative would not conflict with zoning regulations or applicable plans governing scenic quality, nor would it introduce new sources of light or glare (Impact AES-4 and Impact AES-5, Section 3.2, “Aesthetics”).

In summary, while aesthetic impacts under both the Program Renewal and Reduced Frequency Alternative would be less than significant with mitigation, the Reduced Frequency

Alternative would have slightly reduced impacts to scenic resources as compared to the Program Renewal.

Air Quality

Under the Reduced Frequency Alternative, sediment removal and vegetation management activities would occur at half the frequency of the Program Renewal, but each event would be larger in scale to meet maintenance needs. This would likely result in fewer total workdays and less frequent emissions, but each maintenance event could be more intense, potentially resulting in higher emissions per event. Despite this, overall emissions would be slightly reduced over time due to the lower frequency of operations.

This alternative would remain consistent with regional and local air quality plans, including the Bay Area Air District's 2017 Bay Area Clean Air Plan. As with the Program Renewal, Valley Water would continue to implement control measures such as the use of Tier 4 Final equipment, alternative-fueled vehicles, and low-emission practices, maintaining consistency with air quality goals. Therefore, the impact associated with air quality plan consistency (Impact AIR-1, Section 3.3, "Air Quality") would remain less than significant.

Regarding emissions of criteria air pollutants (Impact AIR-2, Section 3.3, "Air Quality"), the reduced number of workdays would likely lead to a reduction in total annual emissions of PM10 and PM2.5, ROG, and NOx. The calculated incremental increase in emissions from existing SMP-2 levels to the Program Renewal are 0.62 tons per year (tpy) for ROG, 1.36 tpy for NOx, 0.4 tpy for PM_{10}, and 0.06 tpy for $PM_{2.5}$, which are all below the Bay Area Air District's significance thresholds of 10 tpy for ROG/NOx, 15 tpy for PM10, and 10 tpy for PM2.5. Furthermore, BMPs GEN-2 (Instream Herbicide Application), GEN-4 (Minimize the Area of Disturbance), GEN-24 (Work Site Housekeeping), GEN-26 (Staging and Stockpiling of Materials), GEN-36 (Dust Management), GEN-37 (Vehicle and Equipment Maintenance), GEN-42 (Pump/Generator Operations and Maintenance), and HM-4 (Posting and Notification for Pesticide Use) would further control dust emissions, equipment exhaust emissions, and pesticide drift emissions during the Program Renewal maintenance activities. Under the Reduced Frequency Alternative, although maintenance events would occur less often, each event might be slightly higher than the Program Renewal on a per-event basis. With implementation of applicable BMPs, emissions under the Reduced Frequency Alternative would remain below the thresholds and would continue to be less than significant, although slightly increased.

For TACs and DPM emissions (Impact AIR-3, Section 3.3, "Air Quality"), these would also decrease in total due to fewer operating days. Valley Water's use of California Air Resources Board (CARB)-compliant equipment and adherence to BMPs—including BMPs GEN-2 (Instream Herbicide Application), HM-4 (Posting and Notification for Pesticide Use), and GEN-37 (Vehicle and Equipment Maintenance)—would further reduce health risks. While larger events could increase localized, short-term emissions, the transitory and intermittent nature of the work, combined with BMPs, would ensure minimal health risks. As a result, this impact would also remain less than significant.

The potential for hydrogen sulfide gas release from excavated sediment would be similar to that of the Program Renewal, as work would still occur in localized, short-term episodes. Therefore, any impacts related to hydrogen sulfide or odor would remain less than significant under Impact AIR-4.

Overall, the Reduced Frequency Alternative would result in fewer emissions over time but could have slightly higher per-event emissions due to the intensity of larger maintenance activities, creating an impact on air quality that is substantially similar to that of the Program Renewal.

Biological Resources

Like the No Project Alternative, the Reduced Frequency Alternative would allow longer intervals between maintenance activities, giving biological systems more time to recover and reestablish ecological structure and function. As a result, impacts on special-status species, riparian habitat, sensitive natural communities, and wetlands would likely be somewhat reduced compared to the Program Renewal. However, because maintenance needs would accumulate over longer periods, each maintenance event would likely be more extensive in scope, potentially resulting in larger, more disruptive operations compared to that of the Program Renewal. Impacts would likely remain less than significant with mitigation, similar to under the Program Renewal (Impacts BIO-1 through BIO-3, Section 3.4, "Biological Resources").

Impacts to nesting birds would remain similar under the Reduced Frequency Alternative compared to the Program Renewal. Like under the Program Renewal, impacts to nursery sites for herons (heron rookeries) would remain significant and unavoidable under the Reduced Frequency Alternative due to the potential abandonment of a nesting colony, or a substantial decline in the number of herons and/or egrets using the colony from implementation of Program activities (Impact BIO-4, Section 3.4, "Biological Resources").

Lastly, similar to the Program Renewal, the Reduced Frequency Alternative would not include any activities that would conflict with local policies and ordinances protecting biological resources, habitat conservation plans, and natural community conservation plans and impacts would be less than significant (Impact BIO-5 and BIO-6, Section 3.4, "Biological Resources").

Overall, the impacts of the Reduced Frequency Alternative on Biological Resources would be slightly greater than those of the Program Renewal. With longer intervals between maintenance, accumulated needs would likely result in larger, more intensive maintenance events, leading to greater short-term disruption compared to the more routine, distributed approach under the Program Renewal.

Cultural and Paleontological Resources

Under the Reduced Frequency Alternative, impacts to cultural resources would be similar to what they would be under the Program Renewal. While maintenance would occur half as frequently under the Reduced Frequency Alternative, ground disturbing maintenance activities would have the same potential to impact known and previously undiscovered archaeological or historical resources and paleontological resources (Impacts CR-1 and CR-3 in Section 3.5, "Cultural and Paleontological Resources") since work would be conducted in the same general areas as the Program Renewal and would consist of similar activities. For the same reason, the Reduced Frequency Alternative would also have a similar potential to unearth human remains as the Program Renewal (Impact CR-2 in Section 3.5, "Cultural and Paleontological Resources").

Overall, the impacts of Reduced Frequency Alternative on Cultural and Paleontological Resources would be substantially similar to those of the Program Renewal.

Energy

The Reduced Frequency Alternative would generate fewer vehicle trips than the Program Renewal, as sediment removal and vegetation management would occur only half as often at any given location. However, each maintenance event would likely be more intensive to address accumulated needs. Despite these differences, overall vehicle usage would remain substantially similar, and Valley Water would continue incorporating newer, more energy-efficient equipment. As a result, energy consumption under the Program Renewal would be comparable to that of the Reduced Frequency Alternative and would not result in wasteful, inefficient, or unnecessary energy use (Impact ENE-1, Section 3.7, "Energy").

Neither the Program Renewal nor the Reduced Frequency Alternative would conflict with or impede any state or local plans for renewable energy or energy efficiency (Impact ENE-2, Section 3.7, "Energy").

Overall, energy-related impacts under both the Reduced Frequency Alternative and the Program Renewal would be substantially similar.

Greenhouse Gas Emissions

Under the Reduced Frequency Alternative, GHG emissions would be generated during short-term use of heavy equipment for vegetation management and sediment removal. While the scale of individual maintenance events would be larger than those under the Program Renewal, their recurrence would be cut in half, resulting in fewer overall operational days. Consequently, total annual GHG emissions would be reduced compared to the Program Renewal, as equipment use and vehicle trips would occur less frequently, even if more intensively during each event. As under the Program Renewal, the Reduced Frequency Alternative would implement Mitigation Measures GHG-1 (GHG Emissions Reduction Practices for Maintenance Activities) and GHG-2 (GHG Emissions Mitigation Program). These include contractor requirements to minimize mobile-source emissions (GHG-1) and the purchase of verified carbon credits to offset any GHG emissions exceeding the Bay Area Air District's thresholds (GHG-2) (Impact GHG-1, Section 3.7, "Greenhouse Gases").

These measures would also support compliance with the Bay Area Air District's guidance and maintain alignment with state mandates such as SB 32, AB 1279, and the 2022 Scoping Plan. Additionally, Valley Water's transition to cleaner technologies, including increased use of hybrid and electric vehicles and tools, would further reduce emissions and advance local climate action and sustainability goals (Impact GHG-2, Section 3.7, "Greenhouse Gases").

Therefore, while GHG emissions under the Reduced Frequency Alternative would be slightly more intense per event, the total annual emissions would be lower, and with continued implementation of GHG-1 and GHG-2, all GHG-related impacts would remain less than significant with mitigation.

Hazards and Hazardous Materials

Under the Reduced Frequency Alternative, sediment removal and vegetation management activities would occur only half as frequently as under the Program Renewal, but each event

would likely involve larger-scale work to compensate for the reduced schedule. As such, while many of the same BMPs from the Program Renewal—such as BMP GEN-2 (Instream Herbicide Application), BMP GEN-24 (Work Site Housekeeping), and BMP GEN-29 (On-Site Hazardous Materials Management)—would still be applied, the intensity of each event could increase the potential for short-term hazards. The risk of hazardous material spills and contamination would still exist, particularly during larger maintenance efforts. However, the continued implementation of BMP GEN-33 (Spill Prevention and Response) and BMP GEN-37 (Vehicle and Equipment Maintenance) would reduce the likelihood and severity of such incidents. Although the larger size of each maintenance event could elevate short-term risks, impacts would remain less than significant with mitigation (Impact HAZ-1, Section 3.8, "Hazards and Hazardous Materials").

Risks of encountering contamination from unknown sources—such as pollutants from stormwater runoff, unhoused discharges, or illegal dumping—would remain under the Reduced Frequency Alternative. While BMPs such as BMP GEN-30 (Existing Hazardous Materials) and BMP GEN-26 (Staging and Stockpiling of Materials) would remain in place, the less frequent but larger maintenance operations may disturb more materials in a single event. Nevertheless, contamination risks would be managed through systematic protocols and continued regulatory compliance, maintaining impacts as less than significant (Impact HAZ-4, Section 3.8, "Hazards and Hazardous Materials").

Emergency access and evacuation routes could be temporarily disrupted during these larger, infrequent maintenance events. However, planning measures, such as BMP GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures), would be maintained to reduce these disruptions. Coordination with emergency services would remain a priority, keeping the overall impact less than significant (Impact HAZ-2, Section 3.8, "Hazards and Hazardous Materials").

Hazardous materials sites—particularly the 48 known sites within 1,500 feet of Program Renewal channels—would still pose a risk of accidental disturbance. Though work would occur less often, the increased scope of each activity might slightly elevate the risk of impacting these sites. However, Valley Water would still adhere to state and federal regulations such as RCRA and CERCLA, and BMPs would be enforced during all operations. As such, the impact would be less than significant, though slightly greater than under the Program Renewal (Impact HAZ-3, Section 3.8, "Hazards and Hazardous Materials").

Work near sensitive receptors such as schools would still result in potential exposure to diesel emissions, NOA, or Valley Fever, especially during high-intensity events. BMP GEN-29 (On-Site Hazardous Materials Management), BMP GEN-39 (Vehicle and Equipment Fueling), and BMP HM-4 (Posting and Notification for Pesticide Use) would continue to be implemented to reduce these risks. However, the concentration of activity in fewer, more intensive events may heighten exposure risks in the short term. Nonetheless, impacts would remain less than significant with mitigation (Impact HAZ-5, Section 3.8, "Hazards and Hazardous Materials").

Over time, although the frequency of environmental disturbances would be reduced, the increased intensity of individual events could lead to more pronounced short-term risks. While comprehensive planning and protective BMPs would still be implemented, the potential for impacts such as contamination from the encampments of unsheltered individuals near storm drain outfalls or Valley Fever exposure from dust-generating activities

may slightly increase. Even so, impacts would remain less than significant with mitigation and regulatory compliance (Impact HAZ-6, Section 3.8, "Hazards and Hazardous Materials").

In conclusion, the Reduced Frequency Alternative would maintain most environmental protections offered by the Program Renewal but may result in slightly higher short-term risks due to the scale of individual maintenance events.

Hydrology and Geomorphology

Under the Reduced Frequency Alternative, some maintenance activities, such as sediment and vegetation removal, would likely not be conducted during the same season as the need for it was identified, which may result in accumulation of sediment and siltation and vegetation overgrowth in the creek channels and could reduce groundwater recharge in the short term. If there are delays in implementing bank stabilization measures, there could potentially be a short-term increase in erosion of stream and channel beds and siltation, which could alter drainage patterns. If less frequent vegetation management occurred, adequate flow conveyance through the channels could be compromised, resulting in the possibility of more flooding. However, in the long term, removal of vegetation and sediment, and implementation of bank stabilization measures would help maintain flow conveyance and would not substantially affect groundwater supplies or recharge, and there would not be an impedance of sustainable management of the ground water basin; impacts would be similar to impacts under the Program Renewal (Impacts HYD/GM-1 and HYD/GM-2(i), Section 3.9, "Hydrology and Geomorphology").

Additionally, like the Program Renewal, the Reduced Frequency Alternative would not result in a substantial increase in the amount of surface runoff that would increase flooding on-or off-site since maintenance activities would reduce the potential for flooding by improving drainage and flow of runoff to downstream areas in the long term (Impact HYD/GM-2(ii), Section 3.9, "Hydrology and Geomorphology").

Similar to the Program Renewal, the Reduced Frequency Alternative would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems and would restore flood conveyance by removing accumulated materials (Impacts HYD/GM-2(iii) and HYD/GM-2(iv), Section 3.9, "Hydrology and Geomorphology").

Although the Reduced Frequency Alternative may have potential to result in impacts to hydrology and geomorphology, with implementation of BMPs, they would likely not result in more severe or new impacts in the long term than the Program Renewal and impacts would be less than significant.

Under the Reduced Frequency Alternative, like under the Program Renewal, only minor amounts of groundwater would be used, and impacts to groundwater storage and recharge would remain minimal. Reduced frequency could slightly lower overall groundwater use, balancing out the intensity of individual events. BMPs would continue to minimize erosion and protect water quality. No substantial changes to impervious surfaces would occur, and improved recharge could result from sediment removal. Overall, impacts to groundwater supply and quality would remain less than significant and consistent with the goals of Valley Water's GWMP (Impact HYD/GM-3, Section 3.9, "Hydrology and Geomorphology").

Overall, the impacts of the Reduced Frequency Alternative would be substantially similar to those of the Program Renewal.

Noise

Like the Program Renewal, the Reduced Frequency Alternative would involve the use of heavy machinery and equipment, creating a temporary or permanent increase in ambient noise levels in the vicinity of the proposed maintenance areas in excess of city or county standards or generating a substantial incremental increase in noise levels. Although the Reduced Frequency Alternative would involve maintenance activities half as frequently at any one given location within Valley Water's maintenance area, the amount of maintenance completed during each event would likely be greater to fulfill overall maintenance needs. In both the case of the Program Renewal and the No Project Alternative, this would cause a significant and unavoidable impact. (Impact NZ-1, Section 3.10, "Noise").

Furthermore, implementation of BMPs GEN-44 (Implement Public Safety Measures) and GEN-45 (Minimize Noise Disturbances to Residential Areas) would be implemented under both the Reduced Frequency Alternative and the Program Renewal and would ensure public notification of upcoming maintenance, limit work to daytime hours near residential areas, and require noise attenuation devices on equipment. Additionally, Mitigation Measure NZ-1 (Noise and Vibration Mitigation Reduction Measures to Align with Local Noise Standards) would involve the implementation of several measures to reduce temporary noise increases to further align with adopted noise ordinances in the Program Renewal Area, including setting limits on the noise levels of some specific equipment pieces such as leaf blowers, grinders, and woodchippers. In addition, signs displayed near grazing animals would provide contact information to receive noise complaints to evaluate future use of grazing in specific work areas.

Under the Reduced Frequency Alternative, noise mitigation efforts would still face challenges. While BMPs such as noise barriers and quieter equipment would be implemented, these measures may not fully alleviate the noise impacts, particularly in sensitive areas. Despite the implementation of BMPs like BMP GEN-45 (Minimize Noise Disturbances to Residential Areas) for noise reduction, temporary increases in noise levels, particularly related to ground vibration, are likely to remain significant and unavoidable (Impact NZ-2, Section 3.10, "Noise"). These increased noise levels could be especially concerning during larger, less frequent maintenance events, which might amplify the intensity of noise disturbances in the affected areas.

Furthermore, this alternative would not introduce new noise-sensitive land uses or receptors in proximity to a private airstrip, within an airport land use plan, or within two miles of a public airport, resulting in no impact (Impact NZ-3, Section 3.10, "Noise").

Overall, the impacts of the Reduced Frequency Alternative on noise and vibration would be substantially similar to those of the Program Renewal.

Public Services and Utilities

Similar to the Program Renewal, the Reduced Frequency Alternative would not involve the construction of any developments or involve any long-term activities that would result in an increased demand for public services, such as police, fire, parks, or schools that would require

new or physically altered public service facilities. Although maintenance activities could result in short-term effects to fire or police services like they would under the Program Renewal (Impact PSU-1, Section 3.11, "Public Services and Utilities"), impacts on public services would be less than significant with implementation of BMPs.

Like the Program Renewal, the Reduced Frequency Alternative would not cause the need for relocated, new, or expanded utilities or service system facilities. There could be potential disruptions to utilities or service systems if activities accidentally damaged or interrupted the utilities' distribution or transmission systems. Due to the implementation of BMPs, impacts to existing utilities would be the same as they would be for the Program Renewal, which would be less than significant (Impact PSU-2, Section 3.11, "Public Services and Utilities").

Similar to the Program Renewal, the Reduced Frequency Alternative would not involve the construction of any new or expanded housing or other occupied buildings that would require the expansion of water or wastewater systems or new water and wastewater facilities. Small quantities of wastewater would be generated from portable restrooms, hand washing stations, grazing, dust control, irrigation, and vehicle cleaning. Like the Program Renewal, sufficient water supplies would be available for the Reduced Frequency Alternative and impacts would be less than significant (Impact PSU-3, Section 3.11, "Public Services and Utilities).

Under the Reduced Frequency Alternative, there may be a change in the amount of sediment and material waste requiring disposal at landfills that would differ from the Program Renewal amounts; however, similar to the Program Renewal, the Reduced Frequency Alternative would not be anticipated to generate solid waste in excess of local standards or exceed remaining capacity of local landfills (Impact PSU-4, Section 3.11, "Public Services and Utilities).

Overall, the impacts of the Reduced Frequency Alternative on public services and utilities would be substantially similar to those of the Program Renewal.

Traffic and Transportation

Similar to the Program Renewal, the Reduced Frequency Alternative could conflict with a program, plan, ordinance, or policy related to the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Temporary lane or sidewalk closures during maintenance could disrupt bicycle and pedestrian access. Although maintenance would occur only half as often under the Reduced Frequency Alternative, each event may be more extensive due to the accumulation of maintenance needs, potentially resulting in larger, more disruptive operations. However, implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures) would ensure public notification, safety measures, and traffic flow management. As a result, impacts under the Reduced Frequency Alternative would remain less than significant (Impact TR-1, Section 3.12, "Traffic and Transportation").

Additionally, reduced maintenance frequency would result in fewer overall vehicle trips compared to the Program Renewal, leading to lower operational VMT. Like the Program Renewal, the Reduced Frequency Alternative would result in a less-than-significant impact

under CEQA Guidelines Section 15064.3(b) (Impact TR-2, Section 3.12, "Traffic and Transportation").

Under the Reduced Frequency Alternative, as with the Program Renewal, maintenance activities involving heavy equipment, vehicles, sediments, or materials near the work site may require temporary lane closures, potentially affecting emergency response times. However, implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures) would ensure public notification, safety protocols, and maintained traffic flow. Therefore, impacts related to increased hazards from design features or inadequate emergency access would remain less than significant (Impact TR-3, Section 3.12, "Traffic and Transportation").

Overall, the impacts of the Reduced Frequency Alternative on traffic and transportation would be closely comparable to those of the Program Renewal.

Tribal Cultural Resources

Under the Reduced Frequency Alternative, as with the Program Renewal, maintenance activities involving ground-disturbance would have the potential to disturb known or previously undiscovered tribal cultural resources, including archaeological resources that may include human remains, as well as archaeological districts and tribal cultural landscapes. The implementation of BMPs GEN-47 (Minimize Impacts to Inadvertently Discovered Cultural Resources), GEN-49 (Discovery of Human Remains), and GEN-50 (Review of Projects with Native Soil) would ensure known tribal cultural resources would be identified, evaluated, and avoided if significant, and procedures would be followed to minimize impacts on previously unknown tribal cultural resources. The impact of the Reduced Frequency Alternative regarding disturbing known or previously undiscovered tribal cultural resources would be less than significant (Impact TCR-1, Section 3.13, "Tribal Cultural Resources").

Overall, the impacts of the Reduced Frequency Alternative on tribal cultural resources would be substantially similar to those of the Program Renewal.

Water Quality

Under the Reduced Frequency Alternative, maintenance activities such as sediment removal and vegetation management would occur half as often as under the Program Renewal, but each event would likely be larger in scale. This change in frequency and intensity would have mixed effects on water quality. Surface water quality could be temporarily impacted due to increased erosion, turbidity, and pollutant mobilization during larger maintenance events. Between activities, reduced channel capacity and unmanaged sediment could raise the risk of water quality degradation during storms or high-flow events. Although BMPs would still be applied, their effectiveness may be challenged by the scale of infrequent operations and increased pollutant accumulation. This could be a potentially significant impact requiring mitigation, compared to a less-than-significant impact under the Program Renewal (Impact WQ-1, Section 3.14, "Water Quality").

Groundwater quality could also be affected, as larger-scale maintenance may increase the volume of hazardous materials used or stored at a site, raising the stakes for accidental releases. Although existing regulations such as RCRA and FIFRA would continue to reduce impacts, the potential for short-term contamination would be slightly higher under this

alternative compared to the Program Renewal. However, impacts would still be considered less than significant (Impact WQ-2, Section 3.14, "Water Quality").

Polluted runoff risks would rise during heavy maintenance periods due to the increased use of herbicides, fuels, and other hazardous materials. Infrequent maintenance may allow for greater accumulation of pollutants between events, increasing the chance of stormwater-related contamination. BMPs would help mitigate these risks to a less-than-significant impact, but overall protection would be somewhat reduced (Impact WQ-3, Section 3.14, "Water Quality").

During flood or inundation events, pollutant release risks would be higher due to both delayed sediment removal and the intensity of maintenance activities when they do occur. Temporary reductions in flood conveyance could elevate the risk of overflow or spill events, especially if maintenance coincides with flood season, leading to a potentially significant impact requiring mitigation compared to under the Program Renewal (Impact WQ-4, Section 3.14, "Water Quality").

Lastly, the Reduced Frequency Alternative could result in temporary inconsistencies with Basin Plans and TMDL goals. Less frequent sediment and trash removal may hinder efforts to control pollutants such as mercury and PCBs, and delayed vegetation management could impact streambank stability and ecological function. The potential for short-term noncompliance with beneficial use protections and water quality objectives would be higher than under the Program Renewal, although still less than significant (Impact WQ-5, Section 3.14, "Water Quality").

Overall, The Reduced Frequency Alternative would likely have greater impacts to water quality compared to the Program Renewal.

Wildfire

Although maintenance would occur less often under the Reduced Frequency Alternative, it would be more intensive when conducted. As a result, activities involving heavy equipment—such as sediment removal, vegetation management, tree removal, and bank stabilization—could temporarily disrupt traffic and interfere with emergency response or evacuation efforts, including during wildfires. Temporary road or lane closures and equipment staging near work sites could also affect traffic flow and major evacuation routes, as activities would likely last for longer when maintenance occurs. However, implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures)—which provide for public notification, safety precautions, and coordination with emergency services—would ensure that impacts on emergency access and evacuation remain less than significant under the Reduced Frequency Alternative (Impact WF-1, Section 3.15, "Wildfire").

While maintenance would occur less frequently under the Reduced Frequency Alternative, activities involving the use of vehicles and internal combustion engine equipment in dryland areas—particularly within high or very high Fire Hazard Severity Zones (FHSZs)—could still pose a risk of accidental wildfire ignition, potentially threatening nearby people and structures. The decreased frequency of fire vegetation management, specifically aimed at enhancing fire resilience, could further contribute to an increased wildfire hazard. Furthermore, the longer intervals between maintenance could also allow for greater buildup

of dry, flammable vegetation, further increasing the risk of brush fires. However, Valley Water would comply with applicable Fire Code and Public Resources Code sections (Sections 4442, 4427, 4428, and 4431), as well as BMP GEN-35 (Fire Prevention), which include wildfire prevention measures such as using spark arrestors, maintaining fire suppression equipment on-site from April 1 to December 1, clearing flammable materials within 10 feet of spark-producing equipment on burn-permit days, and prohibiting gasoline-powered tools within 25 feet of flammable materials on those days. With these measures in place, wildfire-related impacts associated with increased wildfire risk, exposure to wildfire-related pollutants, or the uncontrolled spread of fire under the Reduced Frequency Alternative would remain less than significant (Impact WF-2, Section 3.15, "Wildfire").

Like the Program Renewal, the Reduced Frequency Alternative would not require the installation of new infrastructure but would involve the ongoing maintenance of existing infrastructure, such as flood protection channels. While some maintenance activities would contribute to reducing fire fuel loads and ensuring continued access to Valley Water facilities in the long term, the less frequent maintenance schedule would diminish the overall effectiveness of these benefits compared to the Program Renewal. Additionally, as discussed in Impact WF-2 and summarized above, certain maintenance activities, such as vegetation management, could increase local fire risk or serve as an ignition source in flammable environments, particularly due to the longer intervals between maintenance events. However, potential significant impacts under the Reduced Frequency Alternative related to the installation or maintenance of infrastructure that may exacerbate fire risk or result in ongoing environmental impacts would be minimized through compliance with BMP GEN-35 (Fire Prevention). This would ensure that all earthmoving and portable equipment with internal combustion engines are equipped with spark arrestors, work crews have appropriate fire suppression equipment, and flammable materials are kept clear of equipment capable of producing sparks, flames, or fires. With the implementation of relevant regulatory requirements and the BMP described above, potential impacts from increased local fire risk because of maintenance activities under the Reduced Frequency Alternative would be less than significant (Impact WF-3, Section 3.15, "Wildfire").

Similar to the Program Renewal, the Reduced Frequency Alternative would remove accumulated sediment, vegetation, and debris to restore channel capacity. However, due to the reduced frequency of maintenance activities, there is a possibility that the design flow or appropriate conveyance capacity of facilities may not be maintained between maintenance events. This could elevate the risk of flooding and landslides, including those associated with wildfire events. Even with the implementation of BMP GEN-35 (Fire Prevention), this could be a potentially significant impact requiring mitigation compared to under the Program Renewal (Impact WF-4, Section 3.15, "Wildfire").

Overall, the impacts of the Reduced Frequency Alternative on wildfire would be increased compared to those of the Program Renewal.

5.4.3 Limited Work in Unmodified Channels Alternative

Characteristics of this Alternative

Under the Limited Work in Unmodified Channels Alternative (Limited Work Alternative), maintenance activities that could be done in unmodified channels would be limited to within 100 feet upstream and downstream of human-made structures, such as bridges, road

crossings, stream gauges, outfalls, and trash racks. As a result, a reduced amount of annual maintenance would occur under this alternative. Maintenance near human-made structures would be necessary because it would keep these structures functioning properly and safely. Necessary maintenance activities in unmodified channels located away from human-made structures would not occur, resulting in a reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities, or in unaddressed maintenance needs. If less sediment removal and vegetation management were to occur, specific aspects of the work associated with these activities (such as truck trips for hauling and disposal/reuse) also would be reduced. All other aspects of the Program Renewal (e.g., the proposed BMPs) would be implemented under this alternative. To help illustrate this alternative, Figure 5-1 shows the locations of the unmodified channels.

Impact Analysis

The primary goal of the Limited Work Alternative would be to reduce impacts to biological resources in unmodified channels. Although a range of ecological values would exist in both modified and unmodified channels, portions of the unmodified channels are believed to be among the channels which provide some of the greatest ecological value overall. The majority of impacts to biological resources in unmodified channels would be eliminated, but some disturbance and impact to unmodified channels would be necessary to maintain human-made structures. Compared to the Program Renewal, the Limited Work Alternative may promote the ecological structure and function of unmodified reaches by reducing impacts to plant and animal species, riparian habitat, and wetlands. To the extent that maintenance activities would support or improve ecological structure and function (for instance, create conditions unfavorable to invasive exotic species), these benefits would not be realized to the same extent as under the Program Renewal.

Under the Limited Work Alternative, the overall amount of maintenance likely would be reduced. As a result, impacts related to aesthetics, air quality, biological resources, cultural resources, noise, recreation, traffic, geomorphology, and water quality would be reduced compared to the Program Renewal.

Sediment discharges from bank failures that would not be addressed under this alternative would result in a greater temporary reduction in conveyance capacity than under the Program Renewal, and they would have adverse water quality (sedimentation) impacts. In addition, because flood flow capacities would not be maintained in these unmodified channels, flood risk may increase in these reaches.

The environmental impacts to each resource topic under the Limited Work Alternative are discussed in more detail below.

Aesthetics

Under the Limited Work Alternative, maintenance activities would be confined to areas within 100 feet both upstream and downstream of human-made structures, which are generally not visible from designated scenic viewpoints. While temporary views of equipment and personnel may still occur, the limited scope and duration of work would reduce the likelihood of affecting scenic vistas. Activities such as vegetation management and bank stabilization would be concentrated in already developed areas, making visual changes less apparent, and sediment removal or other minor maintenance would be small in scale and

unlikely to be visible from scenic viewpoints. However, in areas beyond the allowed work limits, sediment accumulation could reduce facility conveyance capacity, potentially causing erosion, flooding, or unmanaged vegetation growth that may negatively affect the visual character of riparian corridors and adjacent areas—impacts that could be more visually disruptive than short-term maintenance. To reduce visual effects where work does occur, Valley Water would implement several BMPs: BMP GEN-4 (Minimize the Area of Disturbance) would minimize disturbance by restricting the footprint of work and prioritizing existing access roads; BMP GEN-24 (Work Site Housekeeping) would maintain a clean and orderly work site; BMP REVEG-1(Seeding) would stabilize disturbed soils using native seed; and BMP REVEG-2 (Planting Material) would use locally sourced plantings to ensure the site blends ecologically and visually with surrounding areas. These practices would help reduce visual impacts on scenic vistas under the Limited Work Alternative to be less than significant (Impact AES-1, Section 3.2, "Aesthetics").

Under the Limited Work Alternative, impacts on scenic resources would generally be less extensive compared to the Program Renewal. Because work would be concentrated near existing infrastructure, it would more often occur in already disturbed or developed visual environments and less frequently in remote or highly scenic natural areas. This would reduce the potential for damage to high-quality views or mature, healthy trees visible from scenic routes or recreational trails. However, some limited activities may still intersect with areas near State Scenic Highways (e.g., SR 9) or County-designated scenic routes and recreational trails, potentially leading to temporary disruptions to views due to the presence of maintenance equipment or the short-term effects of vegetation management. The overall frequency and geographic scope of tree and vegetation removal would be reduced under this alternative, likely resulting in fewer mature, healthy trees being removed and less potential for visual impacts to scenic resources. In locations where maintenance no longer occurs due to the work boundary restriction, increased sediment accumulation, unmanaged vegetation, or tree overgrowth could lead to changes in channel conditions (e.g., erosion, flooding, or decline in vegetation health), which may negatively affect visual character over time and result in long-term degradation of scenic resources.

Nonetheless, BMPs would still be implemented where work occurs to minimize visual impacts. BMP GEN-4 (Minimize the Area of Disturbance) would limit the extent of disturbance and prioritize already disturbed staging areas and access routes, helping reduce the visual footprint of work. BMP GEN-24 (Work Site Housekeeping) would require clean and orderly work sites, reducing clutter visible from scenic viewpoints. BMP REVEG-1 (Seeding) would stabilize exposed soils with native seed to reduce visual scarring, and BMP REVEG-2 (Planting Material) would ensure planting materials are locally sourced and visually cohesive with surrounding landscapes. These measures would help preserve the visual integrity of areas near scenic routes or trails.

While overall fewer trees would be removed under the Limited Work Alternative due to the limit geographic scope of maintenance activities, mitigation would be implemented to reduce potential significant impacts to scenic resources associated with tree removals. Mitigation Measure BIO-12 (Compensatory Mitigation for Impacts to Woody Riparian Vegetation) would offset temporary or permanent tree removal impacts through actions such as replacing non-invasive trees over 6 inches dbh with native species in the same watershed, using reach characterization to guide replanting, and supporting post-wildfire ecosystem recovery. While tree removal may cause short-term visual impacts, these effects would be temporary as replacement vegetation matures. Overall, the Limited Work Alternative would

result in fewer and less severe impacts to scenic resources compared to the Program Renewal, (Impact AES-2, Section 3.2, "Aesthetics"), and impacts would continue to be less than significant with mitigation.

Under the Limited Work Alternative, visual impacts would be limited in scope and duration, occurring primarily in less visually sensitive, urbanized areas. Temporary changes, such as the presence of equipment and minor vegetation removal, could affect views from roads, trails, or adjacent properties but would be short-term and mitigated through BMPs GEN-4 (Minimize the Area of Disturbance), GEN-24 (Work Site Housekeeping), REVEG-1 (Seeding) and REVEG-2 (Planting Material). While visual improvements may result from activities like trash removal and erosion repair, the inability to maintain areas outside the work limits could lead to overgrowth, sediment buildup, and infrastructure degradation that negatively affect scenic quality over time. Nonetheless, within work areas, visual impacts would be less than significant under the Limited Work Alternative due fewer maintenance activities occurring overall (Impact AES-3, Section 3.2, "Aesthetics").

Similar to under the Program Renewal, the Limited Work Alternative would not substantially change the scenic quality of a maintenance site nor conflict with zoning or other regulations governing scenic quality and would not create new sources of light or glare (Impacts AES-4 and AES-5, Section 3.2, "Aesthetics").

Overall, the Limited Work Alternative would have a reduced impact with regard to aesthetic resources compared to the Program Renewal.

Air Quality

Under the Limited Work Alternative, the Program would remain consistent with regional and local air quality plans, including the Bay Area Air District's 2017 Bay Area Clean Air Plan, as the scale and nature of work would not change Valley Water's approach to emissions control. The Limited Work Alternative would continue to incorporate applicable control measures such as using Tier 4 equipment, minimizing fossil fuel use, and expanding the use of alternative-fueled vehicles, aligning with the Plan's goals to reduce emissions and protect air quality and climate. Additionally, consistency with local general plan policies that reference the Bay Area Air District's plans and emphasize emission reductions through efficient equipment and dust control would be maintained. Therefore, the Limited Work Alternative would not hinder implementation of any air quality control measures and would result in a less-than-significant impact related to air quality plan consistency (Impact AIR-1, Section 3.3, "Air Quality").

Under the Limited Work Alternative, emissions of criteria air pollutants would still be generated from soil disturbance, equipment operation, vehicle trips, and pesticide use; however, the overall emissions would likely be reduced due to the spatial restriction limiting the extent and frequency of activities. Although PM_{10} and $PM_{2.5}$, ROG, and NOx would still be emitted, emissions would remain below the Bay Area Air District's significance thresholds, as they would be offset by Valley Water's ongoing use of Tier 4 equipment, hybrid and electric vehicles, and improved fleet turnover. The use of BMPs—such as HM-4 (Posting and Notification of Pesticide Use), GEN-2 (Instream Herbicide Application), GEN-4 (Minimize the Area of Disturbance), GEN-36 (Dust Management), and GEN-42 (Pump/Generator Operations and Maintenance)—would further reduce emissions and exposure risks. While emissions could contribute to regional pollutant concentrations and associated health risks, impacts

would be slightly lower and would remain less than significant due to the reduced scale of operations and implementation of BMPs that minimize both emissions and receptor exposure (Impact AIR-2, Section 3.3, "Air Quality").

Under the Limited Work Alternative, DPM emissions from maintenance equipment would be reduced due to the limited scope and duration of activities. Since the maintenance activities are countywide, transitory, and intermittent, DPM emissions would be temporary, and once the activities cease, the emissions would stop as well. The implementation of CARB's airborne toxic control measures (ATCM) measures would further mitigate exposure to TACs. Pesticide use would still present risks to sensitive receptors downwind, but regulatory measures for pesticide application, such as applying herbicides only under specific conditions (e.g., wind speeds below 10 miles per hour [mph]), would minimize these risks. In addition, BMPs like equipment maintenance, instream herbicide application protocols, and notification for pesticide use would further reduce exposure to DPM and TACs. Overall, the temporary and controlled nature of emissions under this alternative would result in minimal health risks, and the impact would remain less than significant. (Impact AIR-3, Section 3.3, "Air Quality").

Under the Limited Work Alternative, the potential for hydrogen sulfide gas release from excavated sediment would likely be limited to specific, localized work sites. Since the work area is constrained to within 100 feet upstream and downstream of human-made facilities, any odors from excavated sediment, which might result from anaerobic decomposition of organic material, would remain localized and short-term. The intensity of the odor would still depend on the sediment's composition, but it would not be substantial enough to affect human health. Any odors that do occur would be transient and unlikely to affect a large number of people, keeping the impact minimal and less than significant (Impact AIR-3, Section 3.3, "Air Quality").

Overall, while the Limited Work Alternative would have similar impacts to that of the Program Renewal, the overall potential to negatively affect Air Quality would be slightly lowered due to the confined geographic scope of activities.

Biological Resources

Under the Limited Work Alternative, impacts to special-status species, riparian habitat, sensitive natural communities, and wetlands would be substantially reduced compared to the Program Renewal. This alternative would limit the scope of activities by focusing on modified channels, which tend to be less ecologically sensitive and are less likely to function as habitat that supports certain vulnerable species. Maintenance activities, including vegetation clearing and sediment removal, would still occur in these modified channels, where some sensitive resources may still be present. Despite this, residual impacts would be minimized through the implementation of robust mitigation measures and BMPs, making these impacts less than significant with mitigation (Impacts BIO-1, BIO-2, BIO-3, Section 3.4, "Biological Resources").

Impacts to avian nursery sites, particularly related to the abandonment of nesting colonies or declines in heron and egret populations due to maintenance activities, would remain significant and unavoidable (Impact BIO-4, Section 3.4, "Biological Resources"). The alternative would not conflict with local policies or ordinances protecting biological resources, habitat conservation plans, or natural community conservation plans, ensuring

that impacts to these areas would be less than significant and similar to the Program Renewal (Impacts BIO-5 and BIO-6, Section 3.4, "Biological Resources").

Overall, the Limited Work Alternative would reduce the scope and intensity of impacts on biological resources compared to the Program Renewal. While some residual impacts may still occur, the alternative would provide greater protection for some special-status species and sensitive habitats by conducting activities primarily in modified channels and reducing the amount of work conducted in unmodified channels, which tend to be more ecologically sensitive and more likely to function as habitat for certain vulnerable species.

Cultural and Paleontological Resources

Under the Limited Work Alternative, impacts to cultural and paleontological resources would likely be reduced compared to under the Program Renewal because ground-disturbing activities would be confined to a narrower area—within 100 feet upstream and downstream of human-made structures in unmodified channels—thereby avoiding work in unmodified or previously undisturbed channels where undiscovered archaeological, historical, or paleontological resources may be more prevalent. This spatial limitation would lower the likelihood of encountering and disturbing sensitive cultural materials or human remains (Impacts CR-1 through CR-3 in Section 3.5, "Cultural and Paleontological Resources"). However, because maintenance activities would still involve excavation and sediment removal in areas that could contain resources, the potential for impact would not be eliminated and would remain less than significant, though reduced in scope, compared to the Program Renewal. The implementation of BMPs GEN-47 (Minimize Impacts to Inadvertently Discovered Cultural Resources), GEN-48 (Discovery of Paleontological Resources), GEN-49 (Discovery of Human Remains), and GEN-50 (Review of Projects with Native Soil) would further reduce the potential for impacts to archaeological and historical resources by requiring pre-project review of areas involving native soil disturbance to evaluate the likelihood of encountering such resources, and by mandating that work be halted or restricted if resources are uncovered during maintenance activities until appropriate protocols are implemented.

Overall, the impacts of the Limited Work Alternative on cultural and paleontological resources would be slightly reduced compared to those of the Program Renewal.

Energy

Under the Limited Work Alternative, overall vehicle usage and associated energy consumption would likely be reduced compared to the Program Renewal. This reduction would result from the smaller scope of work, with no maintenance activities occurring in unmodified channels farther from built infrastructure. Additionally, Valley Water would continue to integrate newer, more energy-efficient equipment into its operations. As a result, energy use under the Limited Work Alternative would not be wasteful, inefficient, or unnecessary, and impacts related to energy consumption would be slightly lower than those under the Program Renewal (Impact ENE-1, Section 3.7, "Energy").

Like the Program Renewal, the Limited Work Alternative would not conflict with or impede implementation of state or local renewable energy or energy efficiency plans (Impact ENE-2, Section 3.7, "Energy").

Overall, the impacts of the Limited Work Alternative on Energy would be slightly reduced compared to those of the Program Renewal.

Greenhouse Gas Emissions

Under both the Program Renewal and the Limited Work Alternative, short-term use of heavy equipment for maintenance activities would generate GHG emissions. However, as discussed above under "Air Quality," the overall emissions produced would be reduced due to the spatial restriction limiting the extent and frequency of activities compared to the Program Renewal. Additionally, the Limited Work Alternative, like the Program Renewal, would incorporate Mitigation Measures GHG-1 (GHG Emissions Reduction Practices for Maintenance Activities) and GHG-2 (GHG Emissions Mitigation Program) to reduce mobile sources of GHG emissions by implementing contractor requirements to minimize emissions from mobile sources and ensuring the purchase of verified carbon credits to offset emissions that exceed the Bay Area Air District's thresholds. The total amount of emissions produced under the Limited Work Alternative would be less than that of the Program Renewal (Impact GHG-1, Section 3.7, "Greenhouse Gases").

The Limited Work Alternative would also benefit from Valley Water's ongoing shift toward cleaner technologies, such as hybrid and electric vehicles and tools, aligning with local climate action and sustainability goals. However, a net increase in emissions could still occur, requiring continued application of Mitigation Measures GHG-1 (GHG Emissions Reduction Practices for Maintenance Activities) and GHG-2 (GHG Emissions Mitigation Program) to ensure consistency with SB 32, AB 1279, and the 2022 Scoping Plan. With these measures in place, GHG-related impacts would be less than significant with mitigation (Impact GHG-2, Section 3.7, "Greenhouse Gases").

Overall, the impacts of the Limited Work Alternative on Greenhouse Gases would be slightly reduced compared to those of the Program Renewal.

Hazards and Hazardous Materials

Under the Limited Work Alternative, impacts related to hazards and hazardous materials would be slightly reduced compared to the Program Renewal due to the more limited geographic scope and fewer overall maintenance activities. Nonetheless, risks such as accidental spills, exposure to NOA, and Valley Fever would still be present during sediment removal and vegetation management near human-made structures. To address these risks, Mitigation Measure HAZ-1 (Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever) would require the use of dust control measures during ground-disturbing activities involving mechanized equipment in areas with NOA, minimizing the potential for airborne exposure. In addition, the implementation of a comprehensive suite of BMPs—including those related to hazardous materials handling, equipment maintenance, spill prevention, dust suppression, and emergency response planning (e.g., GEN-2 [Instream Herbicide Application], GEN-24 [Work Site Housekeeping], GEN-26 [Staging and Stockpiling of Materials], GEN-29 [On-Site Hazardous Materials Management], GEN-30 [Existing Hazardous Materials], GEN-31 [Paving and Asphalt Work], GEN-32 [Painting and Paint Removal], GEN-33 [Spill Prevention and Response], GEN-34 [Existing Hazardous Sites], GEN-35 [Fire Prevention], GEN-36 [Dust Management], GEN-37 [Vehicle and Equipment Maintenance], GEN-38 [Vehicle Cleaning], GEN-39 [Vehicle and Equipment Fueling], ANI-2 [Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail], ANI-3 [Burrowing Owl Buffer Zone], ANI-4 [Animal

Control in Sensitive Amphibian Habitat], HM-4 [Posting and Notification for Pesticide Use], GEN-43 [Public Outreach], GEN-44 [Implement Public Safety Measures], and GEN-46 [Planning for Pedestrians, Traffic Flow, and Safety Measures])—would further reduce the likelihood of significant hazards to the public or environment and help ensure effective emergency access and evacuation procedures. With these measures in place, impacts under the Limited Work Alternative would remain less than significant with mitigation (Impact HAZ-1, Section 3.8, "Hazards and Hazardous Materials").

Similarly, while temporary lane closures could still occur and potentially affect emergency response and evacuation access, the reduced geographic scope of the Limited Work Alternative would lessen the frequency and extent of such disruptions. As a result, impacts on emergency access and evacuation would remain less than significant (Impact HAZ-2, Section 3.8, "Hazards and Hazardous Materials").

Like the Program Renewal, the Limited Work Alternative would have a less-than-significant impact related to its location on a site listed pursuant to Government Code Section 65962.5. In addition, implementation of BMPs GEN-3 (Avoid Exposing Soils with High Mercury Levels), GEN-4 (Minimize the Area of Disturbance), GEN-28 (Stream Access), GEN-30 (Existing Hazardous Materials), and GEN-34 (Existing Hazardous Sites) would reduce the potential for ground-disturbing activities conducted under the Limited Work Alternative to create a significant hazard to the public or environment from known hazardous materials sites (Impact HAZ-3, Section 3.8, "Hazards and Hazardous Materials").

Under the Limited Work Alternative, ground disturbance would be limited to areas near human-made structures, slightly reducing the likelihood of encountering unknown contamination. However, pollutants from stormwater runoff and illegal dumping could still be present, especially near storm drain outfalls. Activities like sediment removal and bank stabilization would follow Valley Water's Sediment Characterization Plan and site-specific health and safety procedures per Cal/OSHA standards. BMPs such GEN-4 (Minimize the Area of Disturbance), GEN-28 (Stream Access), GEN-30 (Existing Hazardous Materials), GEN-33 (Spill Prevention and Response), and GEN-34 (Existing Hazardous Sites) would remain in place. Additionally, additional testing and remediation for mercury contamination (BMP GEN-3 [Avoid Exposing Soils with High Mercury Levels]) would be required in the Guadalupe Watershed. With these measures, potential impacts from unknown contamination would remain less than significant. (Impact HAZ-4, Section 3.8, "Hazards and Hazardous Materials").

Under the Limited Work Alternative, fewer schools near unmodified channels may be affected due to work in unmodified channels being restricted to areas near human made structures. However, some activities may still occur near schools, with potential exposure to diesel emissions, hazardous materials, NOA, and Valley Fever. Risks would be minimized through the implementation of BMPs (GEN-2 [Instream Herbicide Application], GEN-24 [Work Site Housekeeping], GEN-26 [Staging and Stockpiling of Materials], GEN-29 [On-Site Hazardous Materials Management], GEN-30 [Existing Hazardous Materials], GEN-31 [Paving and Asphalt Work], GEN-33 [Spill Prevention and Response], GEN-34 [Existing Hazardous Sites], GEN-35 [Fire Prevention], GEN-36 [Dust Management], GEN-37 [Vehicle and Equipment Maintenance], GEN-38 [Vehicle Cleaning], GEN-39 [Vehicle and Equipment Fueling], GEN-44 [Implement Public Safety Measures], GEN-46 [Planning for Pedestrians, Traffic Flow, and Safety Measures], ANI-2 [Prevent Harm to Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail], ANI-3 [Burrowing Owl Buffer Zone], ANI-4 [Animal Control in Sensitive Amphibian Habitat], and HM-4 [Posting and Notification for

Pesticide Use]) addressing safe handling, storage, disposal, spill prevention, dust control, and compliance with the Healthy Schools Act. While NOA exposure remains a concern, implementation of Mitigation Measure HAZ-1 (Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever) would reduce this risk. Overall, impacts to schools would be less than significant with mitigation (Impact HAZ-5, Section 3.8, "Hazards and Hazardous Materials").

Under the Limited Work Alternative, the potential risk of Valley Fever would be slightly reduced due to impacting smaller overall work areas. Ground-disturbing activities such as sediment removal, bank stabilization, and maintenance activities would still have the potential to release Valley Fever spores if undisturbed soils containing the fungus are disturbed. However, many of these activities would occur in areas that are already disturbed, reducing the likelihood of encountering the fungus. To mitigate potential risks, dust control measures under BMP GEN-36 (Dust Management) would be implemented, including watering disturbed soils, covering haul trucks, and limiting vehicle speeds. Mitigation Measure HAZ-1 (Implement Dust Control Measures in Areas Containing NOA) and in the Event of High Risk of Valley Fever would further reduce risks by requiring additional dust control and track-out measures in undisturbed areas, as well as coordination with Valley Water's Environmental Health and Safety staff if Valley Fever becomes highly endemic in the region. With these measures in place, impacts related to Valley Fever exposure would be reduced to less than significant with mitigation and would be slightly less than under the Program Renewal (Impact HAZ-6, Section 3.8, "Hazards and Hazardous Materials").

Overall, the Limited Work Alternative would slightly reduce potential risks to Hazards and Hazardous Materials compared to the Program Renewal due to the reduced spatial extent of work.

Hydrology and Geomorphology

Under the Limited Activities Alternative, the impacts to hydrology and geomorphology would be shaped primarily by the approach of using "soft" bank stabilization measures, with sediment removal occurring only from the top of the bank, excluding large equipment from entering the stream channel. This approach could result in several hydrological challenges.

First, the inability to access sediment deposits in areas that are inaccessible from the top of the bank could lead to sediment accumulation, potentially obstructing flow conveyance. While this may not be immediately detrimental, it could impair the system's ability to maintain adequate conveyance capacity, particularly if sediment buildup occurs over time (Impact HYD/GM-1, Section 3.9, "Hydrology and Geomorphology"). Additionally, delays in bank stabilization could increase erosion, as exposed or destabilized banks may fail, leading to further sedimentation and siltation. This could alter drainage patterns and exacerbate flow restrictions (Impact HYD/GM-2[i], Section 3.9, "Hydrology and Geomorphology").

However, since only mechanical or hand methods would be used for vegetation management, there would be reduced risk of large-scale disruption to the hydrological system. This is because large equipment would not be allowed in the channel, helping to preserve the integrity of the streambed and reducing the potential for instream impacts. As a result, this alternative would avoid some of the more damaging geomorphic changes that could occur under a more intensive approach to sediment removal (Impact HYD/GM-2[ii], Section 3.9, "Hydrology and Geomorphology").

With less frequent sediment removal, there could also be a longer-term risk of compromised flow conveyance. If sediment accumulation becomes substantial enough, it could result in localized flooding or reduced drainage capacity in areas where maintenance is infrequent or inaccessible. However, with proper scheduling of maintenance activities and BMPs, these impacts would be mitigated, and the overall effects on flood management and drainage would remain minimal (Impact HYD/GM-2[iii], Impact HYD/GM-2[iv], Section 3.9, "Hydrology and Geomorphology").

Groundwater impacts would remain minimal under this alternative, as the reduced frequency of sediment removal would help preserve groundwater recharge. The overall sediment removal process, though limited, could still improve infiltration by clearing accumulated fine sediments. As such, groundwater quality and supply would not be significantly impacted and would remain consistent with the goals of Valley Water's Groundwater Management Plan (Impact HYD/GM-3, Section 3.9, "Hydrology and Geomorphology").

In summary, while the Limited Activities Alternative may lead to some short-term challenges related to sediment accumulation and flow conveyance, the overall hydrological impacts would be less significant compared to more intensive sediment removal approaches. The use of soft bank stabilization methods and reduced use of equipment in the stream would help minimize long-term geomorphological changes and maintain groundwater recharge.

Noise

Under the Limited Work Alternative, use of heavy machinery and equipment would still be required for maintenance activities near human-made structures in unmodified channels, resulting in temporary or permanent increases in ambient noise levels that could exceed city or county noise standards or generate substantial incremental increases in noise. Although the overall area of maintenance would be reduced compared to the Program Renewal, noise-generating activities would still occur in localized areas where work is allowed. As with the Program Renewal and No Project Alternative, these noise impacts would be considered significant and unavoidable (Impact NZ-1, Section 3.10, "Noise").

BMPs GEN-43 (Public Outreach) and GEN-45 (Minimize Noise Disturbances to Residential Areas) would be implemented under the Limited Work Alternative, ensuring that the public is notified of upcoming maintenance work, restricting work to daytime hours near residential areas, and requiring use of noise attenuation devices on equipment. In addition, Mitigation Measure NZ-1 (Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards) would apply and would require noise limits for certain equipment such as leaf blowers, grinders, and woodchippers, as well as placement of signage with contact information in grazing areas to respond to potential noise complaints.

Under the Limited Work Alternative, noise mitigation efforts would continue to face challenges, similar to the Program Renewal. While BMPs such as noise barriers and quieter equipment would be implemented, they may not fully mitigate the noise impacts, especially in sensitive areas. The reduced frequency of maintenance activities could lead to larger, more intense events, which may amplify noise disturbances and prolong the duration of elevated noise levels in affected areas. Despite the application of BMPs like BMP GEN-45 for noise reduction, temporary increases in noise levels, particularly related to ground vibration, are likely to remain significant and unavoidable (Impact NZ-2, Section 3.10, "Noise").

Furthermore, this alternative would not introduce new noise-sensitive land uses or receptors in proximity to a private airstrip, within an airport land use plan, or within two miles of a public airport, resulting in no impact (Impact NZ-3, Section 3.10, "Noise").

Overall, the Limited Work Alternative would result in localized noise and vibration impacts that are similar in nature, but potentially reduced in geographic extent compared to the Program Renewal. However, due to the continued use of heavy equipment, the overall noise impact would remain significant and unavoidable.

Public Services and Utilities

Under the Limited Work Alternative, no new developments or long-term activities would be introduced that would increase demand for public services such as police, fire, parks, or schools. As with the Program Renewal, short-term impacts to fire or police services could occur during maintenance activities near human-made structures, but these would be temporary and localized. With implementation of applicable BMPs, these impacts would be less than significant (Impact PSU-1, Section 3.11, "Public Services and Utilities").

The Limited Work Alternative would not result in the need for relocated, new, or expanded utility or service system infrastructure. Although there is some potential for accidental disruptions to utilities during maintenance near infrastructure, BMPs would be employed to avoid or minimize such events. Therefore, impacts to utilities would remain less than significant, similar to the Program Renewal (Impact PSU-2, Section 3.11, "Public Services and Utilities").

This alternative would not involve construction of housing or occupied buildings and thus would not create a need to expand water or wastewater treatment facilities. Water would be used in small quantities for dust control, irrigation, grazing, vehicle cleaning, and handwashing, and wastewater would be limited to that generated by portable facilities. As with the Program Renewal, sufficient water supplies would be available, and wastewater generation would be minor, resulting in less-than-significant impacts (Impact PSU-3, Section 3.11, "Public Services and Utilities").

Although the Limited Work Alternative would reduce the geographic scope of maintenance activities, the volume of sediment and other material requiring disposal could shift depending on site-specific needs. However, like the Program Renewal, this alternative is not expected to generate solid waste in excess of local standards or landfill capacity. Therefore, impacts related to solid waste disposal would also be less than significant (Impact PSU-4, Section 3.11, "Public Services and Utilities").

In summary, impacts on public services and utilities under the Limited Work Alternative would be similar in nature and magnitude to those under the Program Renewal and would remain less than significant.

Traffic and Transportation

Similar to the Program Renewal, the Limited Work Alternative could still result in temporary disruptions to the circulation system, including impacts to transit, roadways, bicycle paths, and pedestrian access, particularly near human-made structures where work would be concentrated. Although the spatial extent of maintenance would be more limited, activities

could still require temporary lane or sidewalk closures. However, with implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures)—which provide for public notification, traffic control, and safety measures—these impacts would be effectively managed. Therefore, impacts would remain less than significant (Impact TR-1, Section 3.12, "Traffic and Transportation").

Additionally, by restricting maintenance activities to areas within 100 feet upstream and downstream of human-made structures, the Limited Work Alternative would generate fewer vehicle trips overall compared to the Program Renewal, resulting in reduced operational VMT. As a result, the Limited Work Alternative would have a less-than-significant impact under CEQA Guidelines Section 15064.3(b) (Impact TR-2, Section 3.12, "Traffic and Transportation").

Under the Limited Work Alternative, although maintenance would be confined to a smaller geographic area, activities involving heavy equipment, vehicles, or materials near the work site could still necessitate temporary lane closures, which may affect emergency response times. However, the implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures) would provide for public notification, enforce safety measures, and maintain traffic flow to minimize disruptions. As a result, impacts related to emergency access or hazards from project design would remain less than significant (Impact TR-3, Section 3.12, "Traffic and Transportation").

Overall, traffic and transportation impacts under the Limited Work Alternative would be slightly reduced compared to those of the Program Renewal.

Tribal Cultural Resources

Under the Limited Work Alternative, impacts on tribal cultural resources would likely be reduced compared to the Program Renewal, as maintenance would occur only within 100 feet upstream and downstream of human-made structures in unmodified streams thereby avoiding many undisturbed or culturally sensitive areas. However, ground-disturbing activities could still affect known or previously undiscovered tribal cultural resources that may include archaeological resources, human remains, and cultural landscapes. Implementation of BMPs GEN-47 (Minimize Impacts to Inadvertently Discovered Cultural Resources), GEN-49 (Discovery of Human Remains), and GEN-50 (Review of Projects with Native Soil) would ensure appropriate identification, evaluation, and avoidance of significant tribal cultural resources, as well as procedures for unanticipated discoveries. As a result, impacts would remain less than significant (Impact TCR-1, Section 3.13, "Tribal Cultural Resources").

Overall, the impacts of the Limited Work Alternative on tribal cultural resources would be slightly reduced compared to those of the Program Renewal.

Water Quality

Under the Limited Work Alternative, maintenance activities such as sediment removal and vegetation management would be geographically constrained to modified channels and to areas within 100 feet of human-made structures in unmodified channels. In reaches beyond

these boundaries, no maintenance would occur. Because large portions of unmodified channels would be left untouched, sediment accumulation and vegetative overgrowth in these areas could increase over time. During storm events or high flows, this accumulation may destabilize banks, reduce channel capacity, and trigger erosion or bank failures, leading to increased turbidity and pollutant loading in surface waters. Although BMPs would still be applied in work areas, unmaintained stretches may become sources of nonpoint pollution, limiting the overall effectiveness of water quality protections. Overall, this would be a potentially significant impact requiring mitigation as compared to under the Program Renewal (Impact WQ-1, Section 3.14, "Water Quality").

Groundwater quality impacts would likely be reduced overall, as less frequent and less widespread use of hazardous materials and pesticides would occur due to fewer work sites. However, localized risks may persist at active sites, particularly those near groundwater recharge zones. Compliance with existing regulations like RCRA and FIFRA would help reduce risks, keeping groundwater impacts less than significant (Impact WQ-2, Section 3.14, "Water Quality").

With fewer maintenance activities, the overall potential for polluted runoff would decrease, particularly in areas left undisturbed. However, localized runoff could still occur near human-made structures where maintenance involves fuels, herbicides, or sediment. Standard BMPs would help manage these risks, but the potential for downstream impacts from unmanaged segments would remain elevated. Even so, the impact would be less than significant (Impact WQ-3, Section 3.14, "Water Quality").

Because sediment and vegetation would not be regularly cleared from unmodified channels, flood conveyance capacity could be compromised, raising the risk of pollutant release during flood, tsunami, or seiche events. Maintenance near human-made structures would offer some protection, but widespread inundation risks could increase in non-maintained zones. This could result in greater exposure of fuels or chemicals to floodwaters where active sites are located. This could be a potentially significant impact requiring mitigation compared to under the Program Renewal, which has a less-than-significant impact. (Impact WQ-4, Section 3.14, "Water Quality").

The Limited Work Alternative could pose compliance challenges with Basin Plans and TMDL targets, especially in watersheds impaired by mercury, PCBs, or trash. Less frequent and spatially restricted sediment and trash removal would likely limit the program's effectiveness in reducing legacy pollutants and supporting beneficial uses such as habitat, spawning, and migration. As a result, while the impact would remain less than significant, there would be a higher risk of noncompliance or reduced progress toward regional water quality goals (Impact WQ-5, Section 3.14, "Water Quality").

Overall, impacts to water quality may be moderately greater compared to the Program Renewal, particularly due to lack of intervention in sensitive or impaired waterbodies.

Wildfire

Under the Limited Work Alternative, maintenance in unmodified channels would be restricted to areas within 100 feet of human-made structures, and no work would occur in natural reaches beyond this buffer. As a result, while the frequency and geographic extent of maintenance would be reduced compared to the Program Renewal, activities involving heavy

equipment—such as sediment removal, vegetation management, and bank stabilization—would still occur near infrastructure. These activities could temporarily disrupt traffic, result in road or lane closures, and affect emergency access and evacuation routes, particularly during wildfires. Because maintenance would be restricted to limited segments of channels, these disruptions would be more localized than under the Program Renewal but could still impact key areas. Implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures)—which include public notification, traffic control, and coordination with emergency services—would ensure these impacts remain less than significant (Impact WF-2, Section 3.15, "Wildfire").

Despite the reduced scope of work, use of vehicles and equipment in dryland areas, especially in high or very high FHSZs, could still pose a risk of accidental wildfire ignition. Additionally, the absence of maintenance in unmodified areas could allow dry, flammable vegetation to accumulate, potentially increasing fire risk over time. However, consistent with the Program Renewal, Valley Water would comply with the California Fire Code and Public Resources Code sections 4442, 4427, 4428, and 4431, and would implement BMP GEN-35 (Fire Prevention). This BMP includes fire prevention measures such as spark arrestors, on-site fire suppression tools, clearing flammable materials from work zones, and restricting gasoline-powered tools under certain conditions. With adherence to these measures, impacts associated with wildfire ignition risk and exposure to fire-related pollutants would be less than significant, although slightly increased than under the Program Renewal (Impact WF-2, Section 3.15, "Wildfire").

The Limited Work Alternative would not involve new infrastructure but would continue maintenance of existing infrastructure near human-made structures. While vegetation management and sediment removal in these areas could help reduce fuel loads and maintain emergency access, the exclusion of work in unmodified channels would reduce the extent of these benefits. Longer intervals between maintenance and unmanaged vegetation in areas without work could contribute to elevated fire risk or serve as potential ignition sources. However, through compliance with BMP GEN-35 (Fire Prevention) and applicable fire safety requirements, impacts related to increased wildfire risk due to maintenance activities would remain less than significant (Impact WF-3, Section 3.15, "Wildfire").

Importantly, the inability to conduct maintenance in unmodified channels under the Limited Work Alternative could result in sediment buildup, vegetation overgrowth, and bank instability in those areas. This may compromise the design flow and conveyance capacity of some facilities and increase the likelihood of flooding and landslides—particularly in post-wildfire conditions when channels are more vulnerable. Although BMP GEN-35 (Fire Prevention) would help reduce ignition sources and maintain safe operations, the lack of regular maintenance in these areas could lead to potentially significant impacts requiring mitigation not observed under the Program Renewal (Impact WF-4, Section 3.15, "Wildfire").

Overall, the Limited Work Alternative would result in increased wildfire-related impacts compared to the Program Renewal due to the inability to address vegetation and sediment accumulation in natural channel reaches. While most impacts would remain less than significant with implementation of BMPs and regulatory measures, Impact WF-4 could be potentially significant due to heightened flood and landslide risks associated with unmanaged areas.

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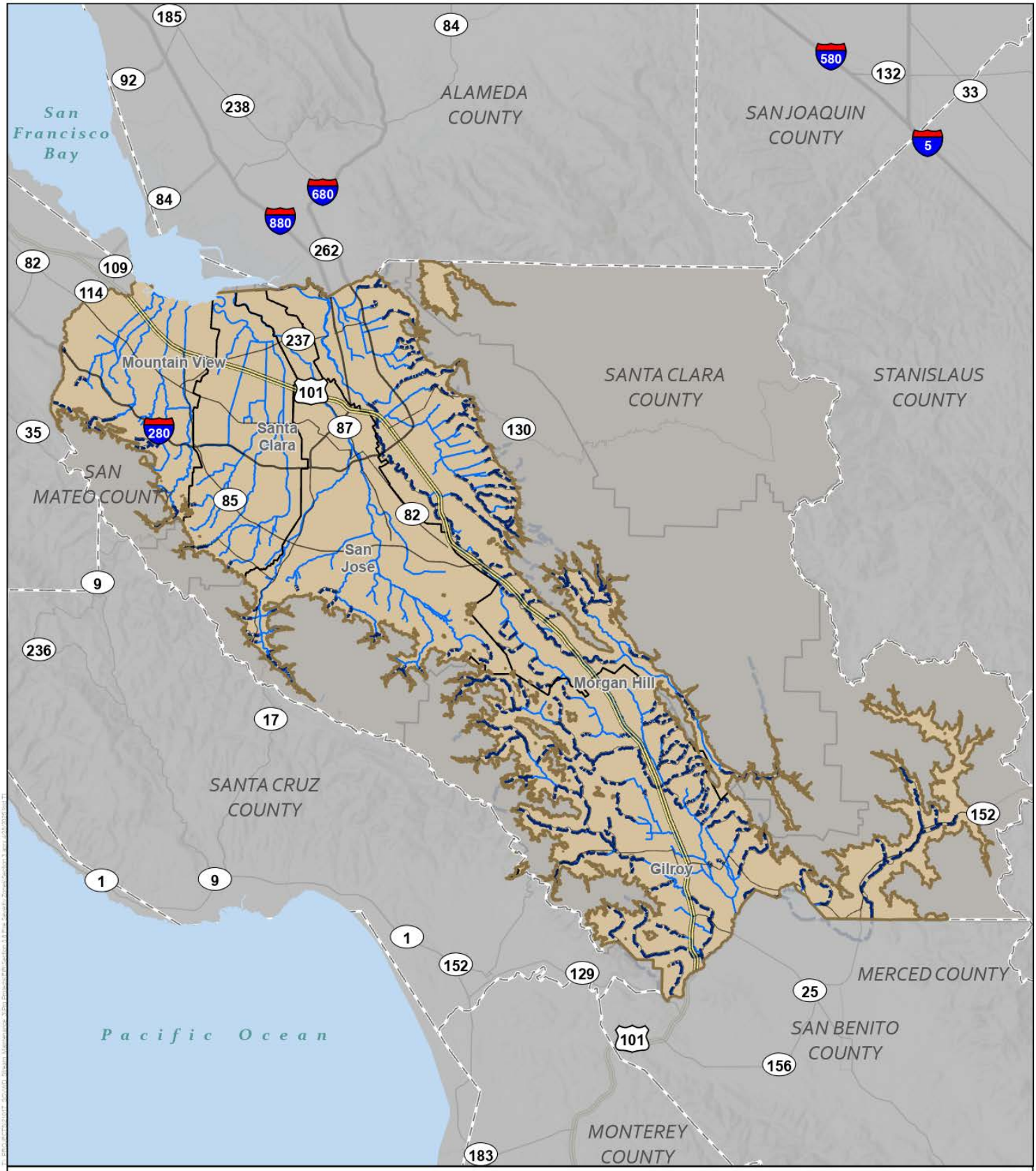

MONTROSE ENVIRONMENTAL

Figure 5-1
Limited Work in Unmodified Channels

Santa Clara Valley Water District
Stream Maintenance Program Renewal
Environmental Impact Report

Source: State of California GIS Services, https://services.gis.ca.gov/arcgis/rest/services; Santa Clara County GIS Services, https://maps.scvgov.org/arcgis/rest/services

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5.4.4 Limited Activities Alternative

Characteristics of this Alternative

Under the Limited Activities Alternative, the five types of maintenance activities proposed in the Program Renewal would occur, except those maintenance activities with the greatest biological impacts would be eliminated or modified. For bank stabilization activities, no hardening of stream banks would be allowed and only "soft" stabilization measures would be used. For sediment removal activities, equipment always would be located at the top of the bank and would not be allowed in the stream channel. For vegetation management activities, no herbicide use would be allowed, and only mechanical vegetation management methods would be utilized. For management of animal conflicts, no fumigants would be allowed. Minor maintenance activities would be conducted as described under the Program Renewal.

The methods included in the Program Renewal currently are used by Valley Water because they are the most effective methods for accomplishing maintenance. Relying on the alternative methods described above such as only soft bank stabilization methods, operating equipment only from the top of bank, and mechanical maintenance of vegetation only would result in increased effort to accomplish the same degree of necessary maintenance. Alternative methods also may result in higher implementation costs and/or less maintenance work getting accomplished each year.

Impact Analysis

Under the Limited Activities Alternative, avoidance of the most impactful activities would eliminate impacts but may increase others. For instance, eliminating the use of herbicides would reduce potential for impacts on water quality. However, repeated hand vegetation removal likely would result in greater trampling of vegetation/habitat than single events of herbicide application. Likewise, the growth of some species of undesirable vegetation may not be effectively controlled without the use of herbicides.

In addition, Valley Water would not always be able to complete needed maintenance by relying solely on the limited activities. For instance, conducting sediment removal from the top of the stream bank may not allow for removal of sediment from certain channels that could not be accessed from the top of the bank. Therefore, this alternative would be likely to impede sediment removal that would be necessary to maintain flood flow conveyance capacity. As a result, the potential flooding risk would increase at these locations.

Furthermore, reliance on alternative methods for implementing maintenance activities could result in new and/or increased environmental impacts, compared to the Program Renewal. For instance, relying solely on mechanical vegetation management as opposed to herbicides could result in greater noise and air quality impacts.

Finally, restricting bank stabilization to "soft" methods could result in inadequate bank protection in instances where hard methods are needed for bank stability. This could result in repeat bank failures, with adverse impacts on habitat and water quality through direct loss of riparian habitat as well as sediment discharges. The need for repeat bank repairs could increase the impacts associated with such maintenance activities (e.g., increased air emissions, noise impacts).

The environmental impacts to each resource topic under the Limited Activities Alternative are discussed in more detail below.

Aesthetics

Under the Limited Activities Alternative, aesthetic impacts on scenic vistas would be minimal due to the limited scope of maintenance activities, which would be confined to urban or low-elevation areas, far from higher-elevation scenic vista viewpoints. The use of soft bank stabilization techniques, mechanical or hand tools for vegetation management, and the prohibition of in-stream equipment would reduce visually disruptive elements. Temporary visual impacts from localized activities, such as equipment or vegetation removal, would not significantly affect scenic vistas. BMPs like minimizing the disturbance area, maintaining clean work sites, and using native revegetation would further reduce visual disturbances. As a result, the impact on scenic vistas would be less than significant and slightly reduced compared to that of the Program Renewal (Impact AES-1, Section 3.2, "Aesthetics").

Under the Limited Activities Alternative, maintenance activities would have minimal effects on scenic resources, particularly along State scenic highways, locally designated scenic routes, and recreational trails. The use of low-impact methods such as mechanical or hand vegetation removal and soft bank stabilization would reduce visual disruptions, although temporary disturbances could occur during maintenance activities. Vegetation management, including tree removal, would be limited to addressing safety or infrastructure needs. Tree removal would be minimized and carefully evaluated to prevent damage to scenic resources. Implementing BMPs such as minimizing work areas, proper site housekeeping, and revegetation efforts would further reduce visual impacts. However, removal of mature, healthy trees could still degrade scenic resources, which would be considered a significant impact. Mitigation Measure BIO-12 (Compensatory Mitigation for Impacts to Woody Riparian Vegetation), including replanting with native species and enhancing ecosystem recovery, would reduce these impacts, making them less than significant with mitigation (Impact AES-2, Section 3.2, "Aesthetics").

Under the Limited Activities Alternative, the Program Renewal activities would have a minimal impact on the visual character and quality of the sites. While maintenance activities such as vegetation management, sediment removal, bank stabilization, and downed tree management could temporarily degrade the visual conditions at specific locations, these changes would generally be short-lived due to the temporary nature of the work. Maintenance activities would occur infrequently at any given site, and vegetation would recover over time. In areas where tree removal is required, only hazard trees would be removed, which would generally improve the visual condition. The implementation of BMPs such as minimizing the disturbance area, proper site housekeeping, erosion control, and revegetation would further mitigate any temporary visual impacts. Therefore, the Program Renewal activities would not substantially degrade the visual character or quality of the sites, and impacts would be less than significant with no mitigation required (Impact AES-3, Section 3.2, "Aesthetics").

Similar to the Program Renewal, under the Limited Activities Alternative, work would primarily occur in urban areas of Santa Clara County, focusing on maintaining existing public infrastructure. The Limited Activities Alternative would not substantially change the scenic quality of any maintenance sites or conflict with local zoning or regulations that govern scenic quality. Given the nature of the activities, which involve maintenance rather than large-scale

development or alterations, there would be no substantial conflict with scenic quality regulations (Impact AES-4, Section 3.2, "Aesthetics").

Like the Program Renewal, under the Limited Activities Alternative, all maintenance activities would be conducted during daylight hours only, with no nighttime lighting being utilized. Additionally, the Limited Activities Alternative would not involve the construction of new facilities or modifications to existing facilities that could introduce reflective surfaces or lighting. As a result, there would be no new sources of light or glare created by the Limited Activities Alternative (Impact AES-5, Section 3.2, "Aesthetics").

Overall, the impacts to aesthetics under the Limited Activities Alternative would generally be less than those under the Program Renewal.

Air Quality

Under the Limited Activities Alternative, Valley Water's maintenance activities would remain consistent with regional and local air quality plans, including the Bay Area Air District's 2017 Bay Area Clean Air Plan. The alternative would not substantially alter Valley Water's emissions control practices but would instead rely on low-impact methods such as soft bank stabilization techniques, hand or mechanical vegetation removal, and the elimination of chemical inputs. Valley Water would continue implementing key emissions-reduction strategies, including the use of Tier 4-compliant equipment, hybrid and electric vehicles, and other measures to reduce fossil fuel consumption. These practices align with regional goals to reduce emissions and improve air quality. Furthermore, local general plan policies promoting efficient equipment usage and dust control would continue to be met. Therefore, the Limited Activities Alternative would be consistent with applicable air quality plans, and impacts would remain less than significant (Impact AIR-1, Section 3.3, "Air Quality").

Criteria air pollutant emissions—such as PM_{10}, $PM_{2.5}$, ROG, and NOx—would still result from soil disturbance, vehicle use, and equipment operation. However, because the alternative restricts activities to the top of the bank and avoids the use of heavy machinery within stream channels, overall emissions would be reduced. In addition, the absence of pesticide application eliminates a potential source of chemical air pollutants. The reduced intensity and frequency of ground-disturbing activities, combined with continued implementation of BMPs—such as dust control, equipment maintenance, and limiting the area of disturbance—would help keep emissions below the Bay Area Air District's significance thresholds, resulting in less than significant impacts (Impact AIR-2, Section 3.3, "Air Quality").

With respect to DPM and other TACs, emissions would be lower under this alternative due to the elimination of in-stream work, shorter activity durations, and reduced equipment use overall. Activities would be transitory and localized, minimizing long-term exposure. Additionally, Valley Water would comply with the CARB's ATCM, and BMPs such as vehicle and equipment maintenance and the elimination of fumigants would further reduce risks. Because no pesticides would be used, potential exposure to airborne chemicals near sensitive receptors would be avoided entirely. These factors contribute to less-than-significant impacts on public health from DPM and TACs (Impact AIR-3, Section 3.3, "Air Quality").

In terms of odors, the Limited Activities Alternative could still generate short-term, localized odors such as hydrogen sulfide from the anaerobic decomposition of organic material in excavated sediment. However, since work would be limited to top-of-bank areas and less

intrusive methods would be used, any odors would be temporary, low in intensity, and unlikely to affect large populations. Odor-related impacts would therefore be less than significant (Impact AIR-4, Section 3.3, "Air Quality").

Overall, the Limited Activities Alternative would result in slightly reduced air quality impacts compared to the Program Renewal.

Biological Resources

Under the Limited Activities Alternative, the overall impacts on biological resources would be reduced compared to the Program Renewal due to the more restrained approach to maintenance and the use of softer, less intrusive techniques. The use of "soft" bank stabilization methods, which exclude hardscape, and the restriction of equipment for sediment removal to areas at the top of the bank (rather than within the stream channel), would reduce physical disturbance to riparian habitat, aquatic ecosystems, and wetlands. By avoiding large equipment in the channel, the potential for instream sediment disruption, erosion, and adverse effects on water quality would be minimized, improving long-term habitat conditions. This impact would be less than significant compared to that of the Program Renewal (Impact BIO-1, Section 3.4, "Biological Resources").

However, the limitations of this approach, such as the inability to access and remove sediment from areas beyond the reach of top-of-bank equipment, could result in an inability to maintain design flow or conveyance capacity, leading to sediment accumulation and the potential for flooding or erosion that may still impact biological resources (Impact BIO-2, Section 3.4, "Biological Resources"). Additionally, the use of mechanical and hand methods for vegetation management, while avoiding herbicides, could increase trampling and damage to vegetation and habitat, particularly with repeated interventions, potentially reducing habitat quality (Impact BIO-2, Section 3.4, "Biological Resources"). The reduced effectiveness of these methods may also result in an increase in non-native species densities, leading to a gradual loss of native flora and a shift toward more invasive species over time. This impact would be slightly worse than under the Program Renewal (Impact BIO-3, Section 3.4, "Biological Resources").

Despite these potential drawbacks, the absence of herbicides and fumigants would likely reduce risks to sensitive species and non-target organisms in the long term, improving the ecological health of the maintenance areas (Impact BIO-4, Section 3.4, "Biological Resources"). Moreover, where soft bank stabilization measures are successfully applied, the overall ecological value of the sites could increase, supporting habitat restoration and long-term stability (Impact BIO-4, Section 3.4, "Biological Resources").

Lastly, the Limited Activities Alternative would not include any activities that would conflict with local policies and ordinances protecting biological resources, habitat conservation plans, and natural community conservation plans and impacts would be less than significant and similar to those of the Program Renewal (Impacts BIO-5 and BIO-6, Section 3.4, "Biological Resources").

While some adverse effects, such as the direct loss of riparian habitat due to soft stabilization methods failing or inadequate sediment management, could still occur, the confined nature of maintenance activities under this alternative would significantly reduce the potential for broader ecological disruption to riparian habitats and wetlands seen in the Program Renewal

due to the presence of equipment in the stream channel, hardscaped bank stabilization techniques, and the use of herbicides and fumigants .

Overall, the Limited Activities Alternative would lessen the impact on special-status species, riparian habitat, and wetlands, leading to a less overall impact on biological resources.

Cultural and Paleontological Resources

Under the Limited Activities Alternative, impacts to cultural and paleontological resources could be increased due to the use of less effective maintenance methods which would potentially require additional excavation. Ground-disturbing activities would not be spatially limited, and the depth and intensity of disturbance could be increased through soft bank stabilization methods which could require excavation of soils and refilling to make an effective bank repair. Furthermore, the absence of herbicide application would require additional excavation due to an increase in mechanical vegetation treatments as a replacement method. This would increase the potential to disturb buried archaeological or paleontological resources by increasing the amount of excavation that is required. (Impact CR-1, Section 3.5, "Cultural and Paleontological Resources").

BMPs GEN-47 (Minimize Impacts to Inadvertently Discovered Cultural Resources), GEN-48 (Discovery of Paleontological Resources), GEN-49 (Discovery of Human Remains), and GEN-50 (Review of Projects with Native Soil) would reduce risks by requiring pre-project review of areas with native soil disturbance and halting work if cultural or paleontological materials are discovered during maintenance activities. Impacts on the disturbance of human remains or sensitive paleontological resources would be less than significant, although increased compared to that of the Program Renewal (Impacts CR-2 and CR-3, Section 3.5, "Cultural and Paleontological Resources").

Overall, impacts to cultural and paleontological resources would be less than significant, but greater than the Program Renewal's impacts due to a greater required amount of excavation.

Energy

Under the Limited Activities Alternative, overall vehicle usage and associated energy consumption would likely be reduced compared to the Program Renewal. This reduction would result from the smaller and more focused scope of work. Additionally, Valley Water would continue to integrate newer, more energy-efficient equipment into its operations. As a result, energy use under the Limited Activities Alternative would not be wasteful, inefficient, or unnecessary, and impacts related to energy consumption would be slightly lower than those under the Program Renewal (Impact ENE-1, Section 3.7, "Energy").

Like the Program Renewal, the Limited Activities Alternative would not conflict with or impede implementation of state or local renewable energy or energy efficiency plans (Impact ENE-2, Section 3.7, "Energy").

Overall, the impacts of the Limited Activities Alternative on energy would be slightly reduced compared to those of the Program Renewal.

Greenhouse Gas Emissions

Under the Limited Activities Alternative, short-term use of heavy equipment for maintenance activities would continue to GHG emissions, similar to the Program Renewal. Despite the more limited scope of work and spatial restrictions, such as prohibiting large equipment within stream channels and requiring the use of "soft" bank stabilization techniques, soft bank repairs may require more frequent bank repair actions in erosion-prone areas. In some cases, repeated soft method bank repairs could result in higher GHG emissions than a single bank repair using harder methods due to repeated uses of GHG-producing equipment. This could lead to greater associated GHG emissions.

Alternatively, Valley Water's ongoing transition to cleaner technologies—such as hybrid and electric vehicles and equipment—would contribute to reduced GHG emissions. In addition, Mitigation Measures GHG-1 (GHG Emissions Reduction Practices for Maintenance Activities) and GHG-2 (GHG Emissions Mitigation Program) would be implemented under this alternative. These measures include contractor requirements to minimize emissions from mobile sources and the purchase of verified carbon credits to offset any emissions that exceed Bay Area Air District's thresholds.

With implementation of Mitigation Measures GHG-1 (GHG Emissions Reduction Practices for Maintenance Activities) and GHG-2 (GHG Emissions Mitigation Program), GHG-related impacts under the Limited Activities Alternative would be reduced compared to those of the Program Renewal (Impact GHG-1, Section 3.7, "Greenhouse Gases"). However, given the reliance on less effective vegetation and sediment management methods, a net increase in emissions could still occur, warranting continued application of these mitigation measures to ensure consistency with state climate policies, including SB 32, AB 1279, and the 2022 Scoping Plan (Impact GHG-2, Section 3.7, "Greenhouse Gases").

In conclusion, the Limited Activities Alternative could result in higher GHG emissions relative to the Program Renewal due to a heavier reliance on GHG-producing equipment needed for repeat repairs associated with a more limited range of methods. The impact under the Limited Activities Alternative would be significant and slightly greater than that of the Project, necessitating mitigation measures to maintain long-term compliance with climate action and sustainability goals.

Hazards and Hazardous Materials

Under the Limited Activities Alternative, impacts related to hazards and hazardous materials would be slightly reduced compared to the Program Renewal due to the smaller work area and elimination of herbicides and fumigants. However, risks such as accidental spills, naturally occurring asbestos (NOA) exposure, and Valley Fever would still be present during ground-disturbing activities like mechanical vegetation removal and top-of-bank sediment work. Mitigation Measure HAZ-1 (Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever), along with BMPs (e.g., GEN-2 [Instream Herbicide Application], GEN-24 [Work Site Housekeeping], GEN-26 [Staging and Stockpiling of Materials], GEN-29 [On-site Hazardous Materials Management], GEN-30 [Existing Hazardous Materials], GEN-31 [Paving and Asphalt Work], GEN-32 [Painting and Paint Removal], GEN-33 [Spill Prevention and Response], GEN-34 [Existing Hazardous Sites], GEN-35 [Fire Prevention], GEN-36 [Dust Management], GEN-37 [Vehicle and Equipment Maintenance], GEN-38 [Vehicle Cleaning], GEN-39 [Vehicle and Equipment Fueling], ANI-2 [Prevent Harm to Salt Marsh Harvest Mouse, California Ridgway's Rail and California Black

Rail], ANI-3 [Burrowing Owl Buffer Zone], ANI-4 [Animal Control in Sensitive Habitat], HM-4 [Posting and Notification for Pesticide Use], GEN-43 [Public Outreach], GEN-44 [Implement Public Safety Measures], and GEN-46 [Planning for Pedestrians, Traffic Flow, and Safety Measures]), would continue to reduce risks related to dust, spills, and emergency access. With these measures, impacts would remain less than significant (Impact HAZ-1 and HAZ-2, Section 3.8, "Hazards and Hazardous Materials").

Though temporary lane closures may still occur, their frequency would be reduced, minimizing effects on emergency access. Work would avoid listed hazardous materials sites, and BMPs GEN-3 (Avoid Exposing Soils with High Mercury Levels), GEN-4 (Minimize the Area of Disturbance), GEN-29 (On-site Hazardous Materials Management), GEN-30 (Existing Hazardous Materials) and GEN-34 (Existing Hazardous Sites) would prevent exposure to known contamination (Impact HAZ-3, Section 3.8, "Hazards and Hazardous Materials").

Ground disturbance would be limited, reducing the chance of encountering unknown contamination, though risks from runoff and illegal dumping remain. Measures like Valley Water's Sediment Characterization Plan, Cal/OSHA protocols, and BMPs GEN-4 (Minimize the Area of Disturbance), GEN-28 (Stream Access), GEN-30 (Existing Hazardous Materials), GEN-33 (Spill Prevention and Response), GEN-34 (Existing Hazardous Sites), and GEN-3 (Avoid Exposing Soils with High Mercury Levels) would maintain less than significant impacts (Impact HAZ-4, Section 3.8, "Hazards and Hazardous Materials").

Fewer schools would be affected, but risks from diesel, NOA, and hazardous materials persist near work sites. BMPs and Mitigation Measure HAZ-1 (Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever) would reduce risks, keeping impacts less than significant with mitigation (Impact HAZ-5, Section 3.8, "Hazards and Hazardous Materials").

Valley Fever risk would be lower due to limited soil disturbance, but BMP-36 (Dust Control) and Mitigation Measure HAZ-1 (Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever) would still be required. Impacts would remain less than significant with mitigation (Impact HAZ-6, Section 3.8, "Hazards and Hazardous Materials").

Overall, the Limited Activities Alternative would result in slightly lower hazard-related impacts than the Program Renewal.

Hydrology and Geomorphology

Under the Limited Activities Alternative, maintenance activities would involve only "soft" bank stabilization measures, with no hardscape allowed. Equipment for sediment removal would always be located at the top of the bank, and sediment removal would not occur in the stream channel. Additionally, no herbicides or fumigants would be used for vegetation management or animal conflict management, respectively; only mechanical methods or hand removal would be employed.

This approach could potentially result in the inability to remove sediment from areas inaccessible from the top of the bank, which could lead to a failure to maintain the design flow or appropriate conveyance capacity of facilities. This could lead to a potentially significant impact compared to that of the Program Renewal (Impact HYD/GM-1, Section 3.9, "Hydrology

and Geomorphology"). The use of mechanical or hand removal methods could also lead to increased trampling, which may lead to increased erosion or siltation compared to that of the program renewal (Impact HYD/GM-2[i], Section 3.9, "Hydrology and Geomorphology").

Alternatively, restricting large equipment from the channel could help maintain the integrity of the streambed and minimize instream impacts. Consequently, this approach would mitigate some of the more significant geomorphic changes associated with intensive sediment removal (Impact HYD/GM-2[ii], Section 3.9, "Hydrology and Geomorphology").

With less frequent sediment removal, there could also be a longer-term risk of compromised flow conveyance. If sediment accumulation becomes substantial enough, it could result in localized flooding or reduced drainage capacity in areas where maintenance is infrequent or inaccessible. In addition, sediment accumulation over a longer period of time can contribute to vegetation growth that could further compromise design flow conveyance. However, with proper scheduling of maintenance activities and BMPs, these impacts would be mitigated, and the overall effects on flood management and drainage would remain minimal (Impact HYD/GM-2[iii], Impact HYD/GM-2[iv], Section 3.9, "Hydrology and Geomorphology").

Groundwater impacts would remain minimal under this alternative, as the reduced frequency of sediment removal would help preserve groundwater recharge. The overall sediment removal process, though limited, could still improve infiltration by clearing accumulated fine sediments. As such, groundwater quality and supply would not be significantly impacted and would remain consistent with the goals of Valley Water's GWMP (Impact HYD/GM-3, Section 3.9, "Hydrology and Geomorphology").

While the Limited Activities Alternative would reduce some environmental impacts (e.g., no use of herbicides or fumigants), it could lead to challenges in maintaining proper flow conveyance, increased habitat impacts, and the risk of sediment accumulation due to limited sediment removal methods. The long-term effects on hydrology and geomorphology may be less favorable compared to the Program Renewal, requiring the implementation of additional mitigation strategies to address the increased risks.

Overall, the Limited Activities Alternative would have worsened impacts with regards to hydrology and geomorphology compared to under the Program Renewal.

Noise

Under the Limited Activities Alternative, the use of heavy machinery and equipment would not be required for maintenance activities in channels where sediment removal cannot be done from the top of bank, as sediment removal would be confined to areas accessible from the top of the bank, with no equipment used in the stream channel. This could limit the scale of noise-generating activities compared to the No Project Alternative. However, when working within a channel, the slopes typically act as a natural noise barrier for sensitive receptors. Therefore, adjacent receptors would be less protected from heavy equipment noise when operations take place on the top of a bank. Additionally, there may still be localized noise impacts from hand or mechanical methods for vegetation management and sediment removal. These activities could result in temporary increases in ambient noise levels, potentially exceeding local noise standards. As a result, these noise impacts would be considered significant and unavoidable (Impact NZ-1, Section 3.10, "Noise").

Furthermore, no hardscape bank stabilization methods would be used under the Limited Activities Alternative, including pile driving. This would significantly decrease overall levels of noise and vibration, as the highest ground-borne vibrations occur during pile driving activities. Furthermore, BMPs would still be implemented for the Limited Activities Alternative to manage noise impacts, such as notifying the public of upcoming work, restricting activities to daytime hours near residential areas, and using noise attenuation devices on equipment. The overall ground-borne noise and vibration impacts under the Limited Activities Alternative would be reduced compared to those under the Program Renewal, as it avoids pile driving and hardscaping techniques—both known for generating high levels of ground-borne vibration. With the implementation of Mitigation Measure NZ-1 (Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards), these impacts would be less than significant (Impact NZ-2, Section 3.10, "Noise").

Overall, the Limited Activities Alternative would result in impacts that are substantially lessened for noise, ground-borne noise, and vibration compared to the Program Renewal.

Public Services and Utilities

Under the Limited Activities Alternative, no new developments or long-term activities would be introduced that would increase demand for public services such as police, fire, parks, or schools. Similar to the Program Renewal, short-term, localized maintenance activities could cause temporary disruptions near existing infrastructure; however, these would be infrequent and minor. With implementation of applicable BMPs, impacts to fire or police services would remain less than significant and be slightly reduced (Impact PSU-1, Section 3.11, "Public Services and Utilities").

This alternative would not require construction or expansion of utility infrastructure. While the exclusive use of top-of-bank equipment for sediment removal and mechanical/hand vegetation management could present minor risks of unintentional utility disruptions, adherence to BMPs would minimize these risks. Therefore, utility impacts would remain less than significant, consistent with the Program Renewal (Impact PSU-2, Section 3.11, "Public Services and Utilities").

The Limited Activities Alternative would not include construction of housing or other occupied structures, and water use would remain minimal, limited to dust control, cleaning, irrigation, and handwashing. Wastewater generation would continue to be minor and handled via portable facilities. Adequate water supplies would be available, and wastewater impacts would be less than significant (Impact PSU-3, Section 3.11, "Public Services and Utilities").

Because maintenance techniques would differ from the Program Renewal (e.g., no in-channel work, no herbicides or fumigants), vegetation management would rely solely on hand and mechanical methods, leading to increased organic waste generation. With this change, solid waste generation could exceed local standards or landfill capacity. As such, solid waste impacts could be significant compared to those under the Program Renewal (Impact PSU-4, Section 3.11, "Public Services and Utilities").

In summary, impacts on public services and utilities under the Limited Activities Alternative would be increased compared to those under the Program Renewal.

Traffic and Transportation

Under the Limited Activities Alternative, temporary disruptions to the circulation system—including impacts to transit, roadways, bicycle paths, and pedestrian access—could still occur during maintenance activities. Although no in-channel equipment use would be allowed and activities would rely on top-of-bank access and mechanical or hand removal methods, maintenance could still necessitate temporary lane or sidewalk closures, particularly near roads or other public access points. However, with the implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures), which include public notification, traffic control, and safety measures, impacts would be effectively managed and remain less than significant, although slightly reduced (Impact TR-1, Section 3.12, "Traffic and Transportation").

Unlike the Limited Work Alternative, the Limited Activities Alternative is not geographically constrained to areas near human-made structures, but the nature of work—relying on less intensive equipment and access methods—may result in fewer or shorter-duration vehicle trips and equipment mobilizations overall. As such, operational VMT would likely be reduced, and the alternative would continue to have a less-than-significant impact under CEQA Guidelines Section 15064.3(b) (Impact TR-2, Section 3.12, "Traffic and Transportation").

Although heavy machinery would not be used within the channel, equipment stationed at the top of the bank and vehicle access routes could still require temporary traffic detours or closures, potentially affecting emergency response access. However, BMPs such as GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures) would ensure adequate public notice, maintain safe detours, and coordinate with emergency services as needed. Therefore, impacts related to emergency access or hazards due to project design would be less than significant (Impact TR-3, Section 3.12, "Traffic and Transportation").

Overall, traffic and transportation impacts under the Limited Activities Alternative would be similar in nature but potentially reduced in intensity and geographic extent compared to the Program Renewal and would remain less than significant.

Tribal Cultural Resources

While the constraints of the Limited Activities Alternative could reduce the depth and extent of ground disturbance—particularly by avoiding in-channel work and reducing the use of heavy machinery—ground-disturbing activities would still occur in areas that may include undisturbed or culturally sensitive tribal cultural resources that may include archaeological sites, human remains or features important to tribal cultural landscapes.

Implementation of BMPs GEN-47 (Minimize Impacts to Inadvertently Discovered Cultural Resources), GEN-49 (Discovery of Human Remains), and GEN-50 (Review of Projects with Native Soil) would continue to provide for early coordination with Native American tribes, establish protocols for identifying and avoiding significant tribal cultural resources, and ensure proper procedures are followed in the event of unanticipated discoveries. These measures would reduce the potential for adverse impacts on tribal cultural resources.

As a result, impacts on tribal cultural resources under the Limited Activities Alternative would be less than significant, and slightly reduced compared to the Program Renewal (Impact TCR-1, Section 3.13, "Tribal Cultural Resources").

Overall, while the Limited Activities Alternative does not geographically restrict maintenance activities, its reduced-intensity methods would likely lower the potential for impacts to tribal cultural resources, particularly from deep ground disturbance. With implementation of applicable BMPs, impacts would remain less than significant.

Water Quality

Under the Limited Activities Alternative, because equipment would not be allowed in the stream channel, sediment removal could be less effective, particularly in areas where sediment cannot be accessed from the top of the bank. Over time, this could lead to reduced channel capacity and localized bank destabilization, contributing to increased turbidity and pollutant loading during storm events. This could be a potentially significant impact requiring mitigation compared to under the Program Renewal (Impact WQ-1, Section 3.14, "Water Quality").

Avoiding use of herbicides and fumigants would slightly reduce risks to groundwater quality due to chemical inputs compared to the Program Renewal (Impact WQ-2, Section 3.14, "Water Quality"). Although the repeated use of mechanical methods could cause increased ground disturbance and vegetation trampling, with some potential for localized erosion and sediment runoff, particularly near recharge zones.

The risk of polluted runoff during maintenance would generally be lower due to the elimination of chemical applications and the restriction of equipment to bank tops. However, sediment and debris dislodged during hand or mechanical work could still enter waterways, especially if not well contained. Standard BMPs would reduce but not eliminate these risks (Impact WQ-3, Section 3.14, "Water Quality").

Flood conveyance capacity may be compromised in areas where sediment cannot be effectively removed from the channel bottom, raising the risk of pollutant mobilization during flood, tsunami, or seiche events. In such cases, soft bank stabilization methods might fail, leading to increased sediment discharges and bank erosion. This could be a potentially significant impact requiring mitigation compared to under the Program Renewal (Impact WQ-4, Section 3.14, "Water Quality").

The Limited Activities Alternative may also hinder compliance with Basin Plan objectives and TMDL targets, particularly for mercury, PCBs, and trash, because physical limitations on maintenance methods may reduce the effectiveness of pollutant removal and site stabilization. This would be a potentially significant impact that would require mitigation (Impact WQ-5, Section 3.14, "Water Quality").

Overall, impacts to water quality under the Limited Activities Alternative could be moderately greater than under the Program Renewal, primarily due to limitations in sediment and vegetation management, increased reliance on less effective stabilization methods, and a higher likelihood of indirect pollutant loading from destabilized areas.

Wildfire

Because maintenance equipment would not be permitted in the stream channel and only light equipment or manual labor would be used under the Limited Activities Alternative, traffic disruptions and effects on emergency access routes—including road or lane closures—would be less frequent and less intrusive compared to the Program Renewal. However, when maintenance occurs near transportation corridors or evacuation routes, localized disruptions could still occur. Implementation of BMPs GEN-43 (Public Outreach), GEN-44 (Implement Public Safety Measures), and GEN-46 (Planning for Pedestrians, Traffic Flow, and Safety Measures) would help reduce the potential for these impacts and keep them less than significant (Impact WF-1, Section 3.15, "Wildfire").

Although the Limited Activities Alternative eliminates the use of heavy equipment in natural channels, maintenance would still occur across a broad geographic area, helping to reduce the risk of fire fuel buildup from unmanaged vegetation. The use of mechanical and hand tools, rather than gasoline-powered or high-risk equipment, further lowers the potential for accidental wildfire ignition, particularly in FHSZs. In addition, adherence to fire prevention BMP GEN-35 (Fire Prevention) and compliance with applicable fire safety codes would further reduce ignition risks. As a result, impacts associated with wildfire risk from maintenance activities would remain less than significant and be slightly reduced compared to those of the Program Renewal (Impacts WF-2 and WF-3, Section 3.15, "Wildfire").

However, due to the elimination of hardscape methods and the inability to conduct in-channel sediment removal, soft stabilization methods may fail in some areas, particularly during high flows or post-wildfire events. This could result in bank instability, sediment discharges, and reduced conveyance capacity, leading to flooding and landslide hazards in vulnerable areas. Without sufficient structural intervention in compromised channels, these risks could escalate under post-wildfire conditions when burn scars increase runoff and sediment loads. While BMP GEN-35 (Fire Prevention) would still apply, these site-specific limitations on effective intervention may result in potentially significant impacts (Impact WF-4, Section 3.15, "Wildfire").

Wildfire-related impacts under the Limited Activities Alternative would generally be less than significant due to the restricted use of hazardous equipment and broader vegetation management coverage. However, the inability to perform more intensive maintenance or structural stabilization could lead to potentially significant impacts related to flooding and landslides requiring mitigation, particularly in post-wildfire conditions.

The Limited Activities Alternative would cause fewer immediate disruptions but likely result in more significant long-term impacts, particularly in vegetation management, sediment buildup, and wildfire vulnerability, due to maintenance restrictions.

5.5 COMPARATIVE SUMMARY OF ALTERNATIVES

Table 5-2 summarizes impacts of the alternatives and compares Program Renewal impacts with the impacts of each of the alternatives evaluated. Cumulative impacts for each resource topic are compared, as well as direct impacts described in Section 5.4 above.

Project impacts fall into the following categories:

- No impact (NI),
- Less-than-significant impact (LTS),
- Less-than-significant impact with mitigation (LTSM), and
- Significant and unavoidable impact (SU) because no feasible mitigation measures are available to reduce impacts to a less-than-significant level.

Table 5-2 compares the magnitude of impacts of the alternatives to those of the Program Renewal, with a "+" symbol indicating that the alternative would have a greater adverse impact than the Program Renewal; a "-" symbol indicating that the alternative would have a less adverse impact than the Program Renewal; or an "=" symbol indicating that the alternative would have the same or substantially similar level of impact as the Program Renewal.

"+" = greater adverse impact; "-" = less adverse impact; "=" = same/substantially similar impact

Table 5-2. Comparative Summary of Impact Determinations for the Program Renewal and Alternatives

Impact	Program Renewal	No Project Alternative	Reduced Frequency Alternative	Limited Work Alternative	Limited Activities Alternative
Aesthetics					
Impact AES-1: Substantial Adverse Effects on Scenic Vista.	LTS	LTS (=)	LTS (=)	LTS (+)	LTS (-)
Impact AES-2: Substantial Damage to Publicly Visible Scenic Resources, including but not Limited to Trees, Rock Outcroppings, and Historic Buildings Viewed from a State or Locally Designated Scenic Highway.	LTS	LTS (-)	LTSM (-)	LTSM (-)	LTSM (-)
Impact AES-3: Substantial Degradation of the Existing Visual Character or Quality of the Site and its Surroundings in Non-urbanized and Urbanized Areas.	LTS	SU (+)	LTS (=)	LTS (-)	LTS (-)
Impact AES-4: Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality in Urbanized Areas.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (=)
Impact AES-5: Substantial Alteration to Day or Nighttime Views resulting from Additional Light or Glare.	NI	NI (=)	NI (=)	NI (=)	NI (=)
Cumulative Impacts on Aesthetics	LTSM	SU[2] (+)	LTS	LTS	LTS
Air Quality					
Impact AIR-1: Conflict with or Obstruct Implementation of Applicable Air Quality Plans.	LTS	LTS (=)	LTS (-)	LTS (=)	LTS (=)
Impact AIR-2: Temporary Increase in ROG, NOx, PM10, and PM2.5 Emissions during Maintenance Activities.	LTS	LTS (=)	LTS (=)	LTS (+)	LTS (-)
Impact AIR-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations (Diesel PM and Pesticides) during Maintenance Activities.	LTS	LTS (=)	LTS (+)	LTS (=)	LTS (-)
Impact AIR-4: Creation of Objectionable Odors.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (-)

[2] The significance conclusion and impact comparison for each cumulative impact has been based on the worst individual direct impact conclusion.

Impact	Program Renewal	No Project Alternative	Reduced Frequency Alternative	Limited Work Alternative	Limited Activities Alternative
Cumulative Impacts on Air Quality	LTS	LTS (=)	LTS (-)	LTS (-)	LTS (-)
Biological Resources					
Impact BIO-1: 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 CDFW or USFWS.	LTSM	LTSM (-)	LTSM (+)	LTSM (-)	LTSM (-)
Impact BIO-2: A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS.	LTSM	LTSM (-)	LTSM (+)	LTSM (-)	LTSM (-)
Impact BIO-3: A substantial adverse effect on State or federally protected wetlands and Waters through direct removal, filling, hydrological interruption, or other means.	LTSM	LTSM (-)	LTSM (+)	LTSM (-)	LTSM (-)
Impact BIO-4: Interfere substantially with the movement of any native resident or migratory species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	SU	SU (=)	SU (=)	SU (=)	SU (=)
Impact BIO-5: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, such as a Tree Preservation Policy or Ordinance.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (-)
Impact BIO-6: Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional or State Habitat Conservation Plan.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (=)
Cumulative Impacts on Biological Resources	LTSM	SU (=)	LTSM (-)	LTSM (-)	LTSM (-)
Cultural and Paleontological Resources					
Impact CR-1: Adverse Effect on Known and Previously Undiscovered Archaeological or Historical Resources.	LTS	LTS (-)	LTS (=)	LTS (-)	LTS (-)
Impact CR-2: Disturbance of Human Remains.	LTS	LTS (-)	LTS (=)	LTS (-)	LTS (-)

Impact	Program Renewal	No Project Alternative	Reduced Frequency Alternative	Limited Work Alternative	Limited Activities Alternative
Impact CR-3: Impacts to Sensitive Paleontological Resources.	LTS	LTS (-)	LTS (=)	LTS (-)	LTS (-)
Cumulative Impacts on Cultural and Paleontological Resources	LTS	LTS (-)	LTS (-)	LTS (-)	LTS (-)
Energy Resources					
Impact ENE-1: Result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.	LTS	LTS (-)	LTS (-)	LTS (-)	LTS (-)
Impact ENE-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	NI	NI (=)	NI (=)	NI (=)	NI (=)
Cumulative Impacts on Energy	LTS	LTS (-)	LTS (=)	LTS (=)	LTS (=)
Greenhouse Gas Emissions					
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	LTSM	LTSM (+)	LTSM (-)	LTSM (-)	LTSM (-)
Impact GHG-2: Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.	LTSM	LTSM (=)	LTS (=)	LTSM (=)	LTSM (=)
Cumulative Impacts to GHGs	LTSM	LTSM (=)	LTSM (=)	LTSM (-)	LTSM (=)
Hazards and Hazardous Materials					
Impact HAZ-1: Create a Significant Hazard to the Public or Environment through the Routine Use, Transport, Disposal, or Accidental Release of Hazardous Materials.	LTSM	SU (+)	LTSM (+)	LTSM (+)	LTSM (-)
Impact HAZ-2: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan.	LTSM	LTS (+)	LTS (=)	LTS (+)	LTS (-)
Impact HAZ-3: Be Located on a Site Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Section Code 56962.5.	LTS	LTS (+)	LTS (+)	LTS (+)	LTS (=)

Impact	Program Renewal	No Project Alternative	Reduced Frequency Alternative	Limited Work Alternative	Limited Activities Alternative
Impact HAZ-4: Be Located on a Previously Undiscovered Contaminated Site.	LTS	LTS (+)	LTS (+)	LTS (+)	LTS (-)
Impact HAZ-5: Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School.	LTSM	LTSM (+)	LTSM (-)	LTSM (+)	LTSM (-)
Impact HAZ-6: Create a Significant Hazard to Construction Workers or the Public Through the Exposure to Valley Fever During Construction Activities.	LTSM	LTSM (+)	LTSM (+)	LTSM (-)	LTSM (-)
Cumulative Impacts to Hazards and Hazardous Materials	LTSM	SU (+)	LTSM (-)	LTSM (-)	LTSM (-)
Hydrology and Geomorphology					
Impact HYD/GM-1: Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such that the Project May Impede Sustainable Groundwater Management of the Basin.	LTS	LTS (+)	LTS (=)	LTS (+)	LTS (+)
Impact HYD/GM-2: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including Through the Alteration of the Course of a Stream or River or Through the Addition of Impervious Surfaces, in a Manner Which Would:					
i. Result in substantial erosion or siltation on- or off-site.	LTS	LTS (+)	LTS (+)	LTS (+)	LTS (+)
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (+)
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (+)
iv. Impede or redirect flood flows.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (+)

Impact	Program Renewal	No Project Alternative	Reduced Frequency Alternative	Limited Work Alternative	Limited Activities Alternative
Impact HYD/GM-3: Conflict with or Obstruct Implementation of a Sustainable Groundwater Management Plan.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (=)
Cumulative Impacts to Hydrology and Geomorphology	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (=)
Noise and Vibration					
Impact NZ-1: Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of the Proposed Maintenance Areas in Excess of City or County Standards or Generate a Substantial Incremental Increase in Noise Levels.	SU	SU (+)	SU (=)	SU (-)	SU (-)
Impact NZ-2: Generate Excessive Ground Vibration or Ground-borne Noise Levels.	SU	SU (+)	SU (=)	SU (-)	LTSM
Impact NZ-3: Be Located within the Vicinity of a Private Airstrip or an Airport Land Use Plan or, within Two Miles of a Public Airport, and Expose People Residing or Working in the Project Area to Excessive Noise Levels.	NI	NI (=)	NI (=)	NI (=)	NI (=)
Cumulative Impacts to Noise	SU	SU (+)	SU (=)	SU (-)	LTSM
Public Services and Utilities					
Impact PSU-1: New or Physically Altered Public Services Facilities, including Police, Fire, Parks, and Schools.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (-)
Impact PSU-2: Relocated, New, or Expanded Utilities and Service System Facilities or Disruptions of Utilities and Service System Facilities including Storm Drainage, Electric Power, Natural Gas, or Telecommunications Facilities.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (=)
Impact PSU-3: Effects on Wastewater Treatment Demand and Water Supply.	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (=)
Impact PSU-4: Exceedance of Landfill Capacity or Non-Compliance with Regulations Related to	LTS	LTS (=)	LTS (=)	LTS (=)	LTS (+)

Impact	Program Renewal	No Project Alternative	Reduced Frequency Alternative	Limited Work Alternative	Limited Activities Alternative
Disposal of Excavated Sediment or Other Materials.					
Cumulative Impacts to Public Services and Utilities	LTS	LTS (=)	LTS (-)	LTS (-)	LTS (+)
Traffic and Transportation					
Impact TR-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities.	LTS	LTS (+)	LTS (=)	LTS (=)	LTS (-)
Impact TR-2: Conflict with CEQA Guidelines Section 15064.3, subdivision (b).	LTS	LTS (=)	LTS (-)	LTS (-)	LTS (-)
Impact TR-3: Substantially Increase Hazards due to Geometric Design Features and Incompatible Uses or Result in Inadequate Emergency Access.	LTS	LTS (+)	LTS (=)	LTS (=)	LTS (=)
Cumulative Impacts to Traffic and Transportation	LTS	LTS (+)	LTS (-)	LTS (-)	LTS (-)
Tribal Cultural Resources					
Impact TCR-1: Adverse Change in the Significance of Known and Previously Undiscovered Tribal Cultural Resources.	LTS	LTS (+)	LTS (=)	LTS (-)	LTS (-)
Cumulative Impacts to Tribal Cultural Resources	LTSM	LTSM (+)	LTSM (-)	LTSM (-)	LTSM (+)
Water Quality					
Impact WQ-1: Water Quality Degradation Resulting in Violation of Surface Water Quality Standards or WDRs; or Otherwise Substantially Degrade Surface Water Quality.	LTS	LTS (+)	LTSM (+)	LTSM (+)	LTSM (+)
Impact WQ-2: Water Quality Degradation Resulting in Violation of Ground Water Quality Standards; or Otherwise Substantially Degrade Ground Water Quality.	LTS	LTS (+)	LTS (+)	LTS (-)	LTS (-)
Impact WQ-3: Create or Contribute Runoff Water that Would Provide Substantial Additional Sources of Polluted Runoff.	LTS	LTS (+)	LTS (+)	LTS (-)	LTS (-)

Impact	Program Renewal	No Project Alternative	Reduced Frequency Alternative	Limited Work Alternative	Limited Activities Alternative
Impact WQ-4: In Flood Hazard, Tsunami, or Seiche Zones, Risk Release of Pollutants Due to Project Inundation.	LTS	LTS (+)	LTSM (+)	LTSM (+)	LTSM (+)
Impact WQ-5: Conflict with or Obstruct Implementation of a Water Quality Control Plan.	LTSM	LTS (+)	LTS (+)	LTS (+)	LTSM (+)
Cumulative Impacts to Water Quality	LTSM	LTS (+)	LTS (+)	LTS (+)	LTS (+)
Wildfire					
Impact WF-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan.	LTS	LTS (+)	LTS (+)	LTS (+)	LTS (-)
Impact WF-2: Exacerbate Wildfire Risks and Thereby Expose People or Structures to a Significant Risk of Loss, Injury, or Death; or Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire.	LTS	LTSM (+)	LTS (+)	LTS (+)	LTS (-)
Impact WF-3: Require the Installation or Maintenance of Infrastructure that may Exacerbate Fire Risk or Result in Temporary or Ongoing Impacts to the Environment.	LTS	LTSM (+)	LTS (+)	LTS (+)	LTS (-)
Impact WF-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	LTS	LTSM (+)	LTSM (+)	LTSM (+)	LTSM (+)
Cumulative Impacts to Wildfire	LTS	LTSM (+)	LTS (+)	LTS (+)	LTS (+)

Notes: CDFW = California Department of Fish and Wildlife; USFWS = U.S. Fish and Wildlife Service

5.6 ALTERNATIVES CONSIDERED AND DISMISSED

The following alternatives were considered but ultimately were dismissed from further analysis for one or more of the following reasons: (1) they were not substantively different from one of the considered alternatives; (2) they would not sufficiently meet the Program Renewal goals and objectives; (3) they were determined to be infeasible; or (4) they would not avoid or substantially reduce one or more significant impacts of the Program Renewal:

- Geomorphic Alternative
- Watershed Approach Alternative
- Return to As-Built Conditions Alternative
- Modified Pajaro River Basin Alternative
- No Herbicides Alternative
- Reduced Extent Alternative
- Alternative Locations
- Reduced Time Frame Alternative

5.6.1 Geomorphic Alternative

This alternative would improve habitat complexity and function in Program Renewal Area streams by restoring geomorphic functions. Restoration of geomorphic functions would include allowing channel meander and sediment transport within Program Renewal streams, by widening stream rights-of-way, creating flood benches where flood flows could disperse, removing hardscape elements, and restoring more natural hydrographs to stream flows.

Although it is anticipated that this alternative would reduce individual maintenance activities in the Program Renewal, it would involve implementation of new capital projects. Because it would focus on capital projects rather than maintenance, it would not meet the fundamental goal of the Program Renewal as a maintenance program for current infrastructure.

Development of these new capital projects would result in substantial additional construction and costs (land, design, and construction) for Valley Water. In addition, along many streams, especially in the Valley floor areas, channels would be very narrow and development would have encroached to the edge of the right of way, making the acquisition of additional right of way to allow channel meandering or create flood plains very difficult and expensive, if not impossible. The capital improvements and associated operational changes could result in a variety of new significant environmental impacts that would need to be mitigated by measures outside of the scope of the BMPs and mitigation measures included in the Program Renewal.

Because this alternative would not meet the Program Renewal fundamental goal as a maintenance program for current infrastructure, would be infeasible to implement in some locations, and would have new significant impacts, it was dismissed. It is noted that, while Valley Water engages in capital projects that are rooted in geomorphic design considerations, such activities are generally considered to be outside the scope of the SMP Update.

5.6.2 Watershed Approach Alternative

This alternative would attempt to reduce or eliminate the need for future sediment removal activities by using watershed management approaches to reduce sediment inputs to Program Renewal streams. To reduce sediment inputs, Valley Water would implement erosion control activities in the upper watersheds of Program Renewal streams. These erosion control activities could include bank stabilization, restoration or replanting of creek banks and surrounding lands, and installing fencing to exclude grazing animals from streams.

Although conceptually the watershed management approach should reduce the need for proposed sediment removal activities, this alternative would be unlikely to eliminate the need for future sediment removal. Because many Program Renewal streams would have confined channels, their capacity to transport or store sediment would be greatly diminished. Thus, to eliminate the need for sediment removal, upstream sediment inputs would need to be reduced to a very large extent (i.e., below pre-European settlement conditions). Furthermore, this alternative would not alleviate the need to conduct other aspects of the Program Renewal (i.e., bank stabilization, vegetation management, management of animal conflicts, and minor maintenance).

Finally, feasibility of this alternative may be limited because Valley Water would not necessarily own the land or have the necessary easements to conduct watershed-based sediment control.

Overall, this alternative would have likely be infeasible and would not be likely to substantially reduce the scope of the Program Renewal or its related significant environmental impacts.

5.6.3 Return to As-Built Conditions Alternative

This alternative would maximize flood protection for residents by focusing solely on restoring design flow conveyance capacity rather than balancing flood protection needs with environmental needs. Valley Water would implement the Program Renewal by focusing on restoring flood flow conveyance capacity, with minimal or no restrictions to protect biological or cultural resources. Sediment removal would be conducted in modified channels without regard for the presence of sensitive species or habitats and could occur as frequently as desired to maintain flood flow conveyance. Vegetation management would be conducted using the most cost-effective methods, which likely would focus on herbicide use, tree removal, and removal of all vegetation from the channel.

This alternative would not meet the basic Program Renewal objective of incorporating stream stewardship principles into maintenance activities, to avoid, minimize, or mitigate impacts on the environment. Additionally, this alternative would not maintain habitat functions in creek systems or the ecosystem health of creeks, channels, and other Valley Water facilities. Furthermore, Valley Water would face greater difficulty in securing environmental permits from regulatory agencies due to the significant environmental impacts of this alternative—particularly on biological and cultural resources. Potential habitat damage for sensitive species and insufficient protection of important cultural sites would be key concerns, especially given the availability of less harmful options, such as the Program Renewal.

5.6.4 Modified Pajaro River Basin Alternative

This alternative was considered in the 2002 SMP EIR, to reduce environmental impacts on biological resources by limiting herbicide use for vegetation management in the Pajaro River Basin. Because an EIR alternative already exists which considers limiting herbicide use (the Limited Activities Alternative), this alternative was not considered further.

5.6.5 No Herbicides Alternative

This alternative would reduce environmental impacts on biological resources by excluding herbicide use for vegetation management in the Program Renewal Area. Because an EIR alternative already exists that considers limiting herbicide use (the Limited Activities Alternative), this alternative was not considered further.

5.6.6 Reduced Extent Alternative

This alternative would preserve the structure and functions of certain areas of high biological value by prohibiting maintenance activities with potential for adverse impacts on stream reaches with sensitive habitats. Sensitive habitat is defined as that which supports endangered species. Streams are by their nature may be sensitive habitats, and a large portion of Program Renewal Area streams provide some sensitive habitat. As a result, in large sections of Program Renewal Area streams, Valley Water would not be able to perform Program Renewal activities needed to maintain flood flow conveyance capacity. Therefore, this alternative would not meet the basic Program Renewal goal and objectives of maintaining the appropriate flood conveyance capacity of Program Renewal Area streams, removing the necessary sediment to provide flow conveyance and safety, stabilizing eroding stream and channel beds, or managing vegetation for flow conveyance, fire code compliance, and to reduce the fire fuel loads and wildfire risks for public safety. It also is partially included in another EIR alternative, the Limited Work in Unmodified Channels Alternative.

5.6.7 Alternative Locations

This alternative would reduce environmental impacts by conducting maintenance activities at locations where fewer sensitive environmental resources were located. Although the Program Renewal activities could restore flood conveyance capacity in any reach where they were conducted, the Program Renewal specifically would target stream reaches where the design conveyance capacity had been reduced. Conducting these activities at unnecessary locations would not address the needs for maintenance activities in reaches where conveyance capacity had decreased. This alternative could increase flood conveyance capacity in reaches beyond the design capacity, resulting in a capital project and activities outside of the scope/intent of the Program Renewal. This alternative would not meet the basic Program Renewal goal and objectives of maintaining the appropriate flood conveyance capacity of Program Renewal Area streams, removing the necessary sediment to provide flow conveyance and safety, stabilizing eroding stream and channel beds, or managing vegetation for flow conveyance, fire code compliance, reducing the fire fuel loads and wildfire risks for public safety in reaches where it is needed most.

5.6.8 Reduced Time Frame Alternative

This alternative would reduce environmental impacts by limiting sediment removal, instream vegetation management, herbicide application, and bank stabilization activities to the period from June 15 to October 15. The Program Renewal would allow these activities to occur from October 15 to December 31, as long as the weather remained dry. Because the No Project Alternative already considered limiting work to the period from June 15 to October 15, this alternative was not considered further.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Weighing impacts on all resource areas as compared in Table 5.2, and the ability to achieve project objectives, the Limited Activities Alternative is considered to be environmentally superior. Compared to any of the alternatives, it would strike the most appropriate balance among maintaining the design flow or appropriate conveyance capacity of facilities, protecting the ecological integrity of channels, and addressing other short- and long-term impacts associated with the proposed maintenance activities.

Among the alternatives to the Program Renewal considered in this chapter, the Limited Activities Alternative is considered the environmentally superior alternative because by limiting the type of activities to remove hard stabilization techniques, only allowing equipment to operate from the top of bank and not using herbicide or fumigants, it would reduce many impacts associated with these activities such as impacts on tribal cultural resources, transportation, noise, hazards, energy, biological resources, air quality, and aesthetics. However, this alternative would also be likely to impede sediment removal that would be necessary to maintain flood flow conveyance capacity. The need for repeat bank repairs could increase the impacts associated with such maintenance activities. Lastly, this alternative would result in increased effort to accomplish the same degree of necessary maintenance and also may result in higher implementation costs and/or less maintenance work getting accomplished each year.

The other alternatives were not selected as the environmentally superior alternative for the following reasons:

- ***No Project Alternative.*** Although this alternative would provide only a slight reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities, maintenance would not necessarily be conducted in a timely manner to avoid flood hazards. Furthermore, maintenance activities may not be implemented along with a comprehensive mitigation approach and consistent set of BMPs. Therefore, flood risk would be greater and, at the same time, more residual impacts likely would remain.

- ***Limited Work Alternative.*** As a result of reduced maintenance activities in unmodified reaches, this alternative would promote the ecological structure and function of these reaches and, therefore, would reduce a variety of impacts related to the Program Renewal in those locations. However, this alternative would result in increased flood risk along unmodified channels and resulting impacts on downstream creek systems.

- ***Reduced Frequency Alternative.*** This alternative would lessen impacts on biological resources, as extended intervals between maintenance activities would provide

ecosystems more time to recover their ecological structure and function, leading to a modest reduction in effects on wetland and riparian habitats. However, the longer gaps between maintenance would also result in increased sediment buildup and instream vegetation growth, causing a more pronounced temporary decline in conveyance capacity and limiting the ability to maintain the design flow or appropriate conveyance capacity of facilities. Additionally, the extended period between maintenance activities would allow more non-instream vegetation to grow unchecked, temporarily heightening fire hazards along roads and levees.

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Chapter 6.
Report Preparation

Santa Clara Valley Water District

5750 Almaden Expressway
San Jose, CA 95118-3686
(408) 630-2090

Jon Jankovitz	Environmental Services Manager
Billy Williams	Senior Environmental Planner
Jeffrey Lewis	Senior Biologist

With contributions from:

Carole Foster
Devin Mody
Jennifer Codianne
Susanna Inda
Rebecca Wolff
Ryan Tregoning
Richard Gilmore

Montrose Environmental Solutions, Inc.

1 Kaiser Plaza, Suite 340
Oakland, CA 94612
(510) 421-7664

Ken Schwarz	Managing Principal
Tom Engels	Senior Principal
Carley Dutra	EIR Project Manager
Debra Lilly	Senior Associate
Bridget Lillis	Senior Environmental Professional
Janis Offerman	Senior Associate Archaeologist
Dean Martorana	Senior GIS Scientist
Patrick Donaldson	Senior Environmental Professional

Diana Roberts	Associate Environmental Professional
Jennifer Schulte	Environmental Analyst
Emma White	Project Environmental Professional
Alexandria Fraser	Project Environmental Professional
Linda Littleton	Editor

H.T. Harvey & Associates
(Terrestrial Biology)

983 University Avenue, Building D
Los Gatos, CA 95032
(408) 458-3205

Steve Rottenborn	Principal Wildlife Ecologist
Robin Carle	Principal Wildlife Ecologist
Kelly Hardwicke	Principal Plant/Wetlands Ecologist
Mark Lagarde	Senior GIS Analyst

Stillwater Sciences
(Fisheries Biology)

279 Cousteau Place, Suite 400
Davis, CA 95618
(209) 817-7112

Katherine Ayres	Senior Scientist
Matt McKechnie	Fisheries Scientist
Danielle Yaconelli	Fisheries Scientist
Cooper Walton	Wildlife Biologist

Environmental Science Associates
(Cultural, Paleontological, and Tribal Cultural Resources; Traffic and Transportation)

575 Market Street, Suite 3700
San Francisco, CA 94105
(415) 962-8440

Rachael Carnes	Managing Planner
Heidi Koenig	Senior Archaeologist
Juliana Medan	Environmental Planner

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Chapter 5, Alternatives Analysis

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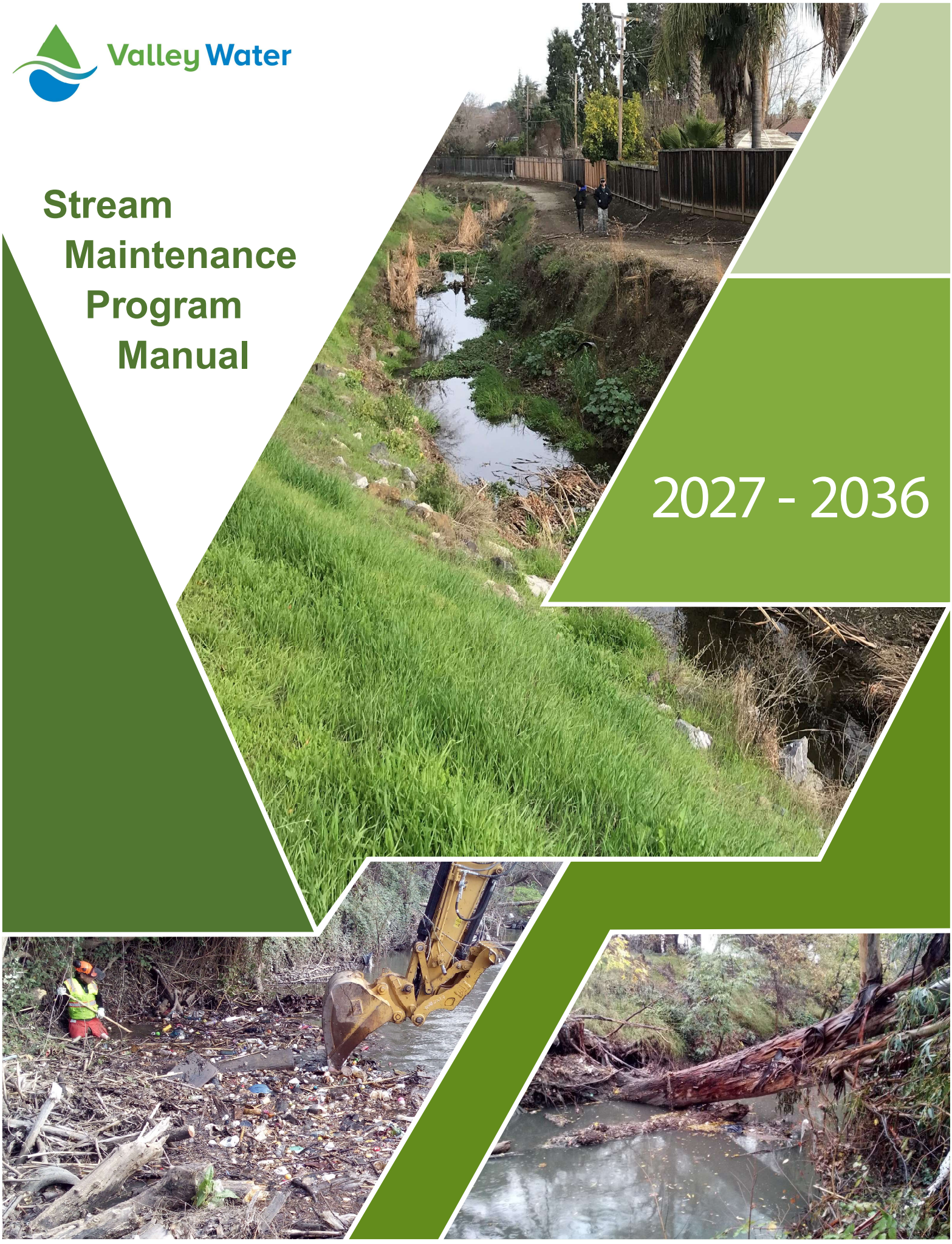
Appendix A

2027-2036 Stream Maintenance Program Manual

Valley Water

Stream Maintenance Program Manual

2027 - 2036



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ACRONYMS

°F	degrees Fahrenheit
1B	California Native Plant Society List 1B
A1	Alviso Salt Pond A1
A12	Alviso Salt Pond A12
A16	Alviso Salt Pond A16
A2W	Alviso Salt Pond A2W
A7	Alviso Salt Pond A7
A8	Alviso Salt Pond A8
AB1	Alviso Salt Pond AB1
AB2	Alviso Salt Pond AB2
ACB	Articulated Concrete Blocks
ACHP	Advisory Council on Historic Preservation
AMM	avoidance and minimization measure
ANI	Management of Animal Conflicts Best Management Practice
ANSI	American National Standards Institute
APAP	Aquatic Pesticide Application Plan
ASR	Annual Summary Report
BA	Biological Assessment
BANK/BANK_X	Bank Protection Best Management Practice
Basin Plan	Water Quality Control Plan
BCDC	San Francisco Bay Conservation and Development Commission
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CC /CCC	Central Coast/Central California Coast
CCM	Cellular Concrete Mats
CCR	California Clapper Rail
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDPR	California Department of Pesticide Regulation
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CIP	Capital Improvement Project
cm	centimeter
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRR	California Ridgway's Rail
CSSC	California Species of Special Concern
CWA	Clean Water Act
cy	cubic yards
dbh	diameter at breast height
EA	Environmental Assessment

Acronyms

EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESM	engineered streambed material
Evelyn Project	Stevens Creek Evelyn Avenue Fish Passage Project
F&G	Fish and Game
FE	Federal Endangered
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FMA	Five-Year Mitigation Area
FMP	Fisheries Management Plan
FONSI	Finding of No Significant Impact
FP	Fully Protected
fps	feet per second
FSEIR	Final Subsequent Environmental Impact Report
FT	Federal Threatened
FWCA	Fish and Wildlife Coordination Act
GEN	Pre-project Planning and General Best Management Practice
GIS	Geographic Information System
Habitat Agency	Santa Clara Valley Habitat Agency
HMMP	Habitat Mitigation and Monitoring Plan
HM-X	Pesticide Best Management Practice
HTL	high tide line
Hwy	Highway
IAWG	Interagency Working Group
IECA	International Erosion Control Association
IIPMP	County-wide Integrated Invasive Plant Management Program
ILF	In Lieu Fee
ISA	International Society of Arboriculture
ITP	Incidental Take Permit
lbs	pounds
LOS	Level of Service
LTMS	Long-Term Management Strategy
LWD	Large Woody Debris
MBTA	Migratory Bird Treaty Act
MG	Maintenance Guideline
MHWM	mean high water mark
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MON	monitoring
MRP	Municipal Regional NPDES Permit
MSA	Magnuson-Stevens Fishery Conservation and Management Act
N/A	not applicable
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration

Acronyms

NPDES	National Pollution Discharge Elimination System
NPW	Notice of Proposed Work
NRHP	National Record of Historic Places
O&M	operations and maintenance
OHG	Overhanging Growth
OHW	Ordinary High Water
OHWM	Ordinary High Water Mark
PBO	Programmatic Biological Opinion
pH	hydrogen concentration
PMA	Permanently Mitigated Area
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
Program	Stream Maintenance Program
QAC	Qualified Applicator Certificate
QAL	Qualified Applicator License
QEMS	Quality Environmental Management System
RCD	Resource Conservation District
REVEG-X	Revegetation Best Management Practice
RGP	Regional General Permit
RPF	Registered Professional Forester
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SC	State Candidate
SCCC	South Central California Coast
SCV	Santa Clara Valley
SCWA	Sonoma County Water Agency
sDPS	southern distinct population segment
SDR	Sediment Deposition Reaches
SE	State Endangered
SED / SED-X	Sediment Removal Best Management Practice
SF	San Francisco
SEIR	Subsequent Environmental Impact Report
SFEIR	Subsequent Final Environmental Impact Report
SHPO	State Historic Preservation Officer
SMHM	Salt Marsh Harvest Mouse
SMP	Stream Maintenance Program
SMP-1	Stream Maintenance Program 2002-2012~~3~~
SMP-2	Stream Maintenance Program 201~~3~~4-2023
SMP-3	Stream Maintenance Program 2027–2036
SP	State Protected
SPD	Standard Operating Procedures for Determination (of Mitigation Ratios, ACOE)
sq ft	square feet
SR	State Rare
SRA	Shaded Riverine Aquatic
ssp.	subspecies
ST	State Threatened
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Load
UC	University of California
UPRR	Union Pacific Railroad
US	United States

Acronyms

USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
Valley Water	Santa Clara Valley Water District
var.	variety
VEG-X	Vegetation Best Management Practice
VHP	Valley Habitat Plan or Santa Clara Valley Habitat Plan
WDR	Waste Discharge Requirements
WPCP	Water Pollution Control Plant
WUI	Wildland-Urban Interface

GLOSSARY OF SIGNIFICANT TERMS

1 Percent Flood	Refers to a flood of a magnitude that has an estimated probability of 1 in 100 of occurring in any given year. Technically more precise way of referring to the “100-year flood.” Generally, 1 percent, 2 percent, and 10 percent events refer to levels of flood flows with an expected recurrence of 100, 50, and 10 years, respectively.
100-Year Flood	Flood of a magnitude with an expected recurrence of once in 100 years. Synonymous with 1 percent flood.
Adaptive Management	A dynamic process that recognizes that the future cannot be perfectly predicted. In response to imperfect predictions, planning and management strategies are modified as better information becomes available. It is a continuous improvement process whereby monitoring and analysis of the results of past actions are fed back into the current decision-making process.
Aggradation	Process of a channel raising its elevation through deposition of sediments. A type of fluvial geomorphic instability. (See “Degradation.”)
Anadromous	A term used to describe the life history characteristics of fishes that move from saltwater to freshwater to lay eggs. The juvenile fish then move from freshwater to saltwater to grow and mature.
Annual Plant	A plant that completes its life cycle and dies in one growing season or one year (e.g., poppies, ~~monkeyflower,~~ wild oat).
Annual Work Plan	The stream maintenance work identified for a given year through field inspections. Specific information, such as location, size, and type of sediment removal, vegetation management, and bank stabilization work activity, is provided in the annual work plan.
Appurtenant Structures	Accessory structures, such as storm outfalls, stream gauges, trash racks, flap gates, tide gates, vaults, bridges, wing walls, and headwalls, that are associated with channels.

Glossary of Significant Terms

Aquatic Vegetation	Herbaceous vegetation that grows in the wetted channel bottom and is typically dependent on either sustained flow or prolonged periods of water on site for survival.
Avian	Bird or bird-like.
Avoidance	Strategies for the planning, design, maintenance, and operation of Valley Water facilities to provide water supply and flood protection that refrain from causing significant adverse environmental impacts.
Bank/Bench	The area of the bank above the bankfull elevation and below the toe of levee inboard if in a reach with levee~~, and below the property line if not in a levee reach~~.
Bank Repair	See Bank Stabilization.~~ Maintenance of existing bank stabilization structures with in-kind, in-place materials. This type of maintenance occurs when such structures fail.~~
Bank Stabilization	Bank stabilization involves any action by Valley Water to stream banks and/or beds that are eroding (repair), as well as preventive erosion protection. Valley Water implements stream bank stabilization when the problem (1) causes or could cause significant damage to a property or adjacent property, (2) is a public safety concern, (3) negatively affects transportation or recreational use, (4) negatively affects water quality, and/or (5) negatively affects riparian habitat. Bank protection stabilizes a channel bank and/or bed by using rock, rip rap, concrete, soft materials, vegetation, or a combination of materials or methods. Bank stabilization can also include preventative maintenance to ensure banks do not erode in the future. This new work is considered routine maintenance because it is either restoring the flood protection function of a modified channel, or it is repairing a natural bank to its approximate condition prior to becoming an erosion problem.

Glossary of Significant Terms

Bankfull	The river elevation (stage) at which the most effective geomorphic work occurs. This is also referred to as the *dominant discharge* and is the stage that generally corresponds to a flow event with a 1- to 2-year recurrence interval. When the channel is flowing full, the water surface is at floodplain level and the flow rate is the bankfull discharge.
Bankfull Bank	The area of bank between instream and bankfull elevation.
Bankfull Elevation	The point where the normal channel meets the floodplain, the elevation at the top of the channel banks. When the channel is flowing full, the water surface is at floodplain level and the flow rate is the bankfull discharge.
Basin	For the purposes of the Stream Maintenance Program, a depression or valley that drains to a common waterbody. In Santa Clara County, two major hydrologic basins drain into either San Francisco Bay or Monterey Bay. In the northern portion of the county, streams of the Santa Clara Basin drain to San Francisco Bay. To the south, streams in the Pajaro River Basin drain ultimately to Monterey Bay.
Bed	The bottom of a body of water, such as a stream.
Bedload	Material moving on or within a few particle diameters above the streambed, rolling or sliding, but not carried in the water column itself. Generally moves more slowly than the streamflow itself. Compare with *suspended sediment*. Bedload does not mean the rate of discharge of bed material. (See “Bedload Discharge.”)
Bedload Discharge	The rate of bedload transport; the quantity of bedload passing a given point on the channel in a unit of time.
Bench	A flat or slightly sloped area that is adjacent to a stream channel and above ordinary high water; also known as a terrace.
Berm	A raised area of earth acting as a temporary or permanent levee.

Glossary of Significant Terms

Best Management Practice (BMP)	An activity, procedure, or other standard management and work practice that provides the most effective means of preventing or reducing pollution or other adverse environmental consequences. BMPs are incorporated into project activities to avoid and minimize environmental impacts.
Biological Monitor	An individual who has academic and professional experience in biological sciences and related resource management activities as they pertain to this project; experience with construction-level biological monitoring; ability to recognize species that may be present within the project area; and familiarity with the habits and behavior of those species.
Biologist	An individual who has academic and professional experience in biological sciences and related resource management activities as they pertain to this project; ability to recognize species that may be present within the project area; and familiarity with the habits and behavior of those species. See “Qualified Biologist.”
Biotechnical	A method of bank stabilization emphasizing the incorporation of soft structures (e.g., vegetation) rather than hard structures (e.g., concrete). See “Hard Structures” and “Soft Structures.”
~~**Biotechnical Channel**~~	~~A natural or artificial waterway that periodically or continuously contains moving water, or which forms a connecting link between two bodies of water.~~
Box Culvert	A water channel in the shape of a rectangular concrete box.
Brackish Water	Water that is a mixture of freshwater and saltwater, with a salinity less than that of seawater.
Bypass Channel	A flood control facility through which a portion of a stream’s flow is diverted at one point and reintroduced into the stream at another point downstream. Bypass channels can be used during the construction or maintenance process. Permanent bypass channels can also be designed to accommodate flood flows.

Glossary of Significant Terms

Bypass Structure	On a construction site, a generic term for any type of structure used to pond water and convey it around a work site (e.g., cofferdam, bypass pipe, channel).
California Environmental Quality Act (CEQA)	The California Environmental Quality Act (California Public Resources Code Sections 21000 et seq.) establishes a duty for public agencies to avoid or minimize environmental damage where feasible, recognizing that a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors. CEQA is intended to facilitate (1) the disclosure of the significant environmental effects of proposed activities to decision makers and the public, (2) the identification of ways to avoid or reduce environmental damage, and (3) the prevention of environmental damage by requiring the implementation of feasible alternatives or mitigation measures.
Capital Improvement Program (CIP)	A Valley Water program focused on making smart investments in infrastructure that are critical to providing safe, clean water; flood protection; and environmental stewardship to Santa Clara County. Valley Water's CIP includes a five-year plan, updated annually on a rolling basis, identifying capital projects to be implemented. For the purposes of the Stream Maintenance Program, CIP projects are large flood control construction projects that affect the flood conveyance capacity of the stream. These projects are not considered routine stream maintenance.
Certified Arborist	An individual who specializes in the care and management of trees, focusing on their health, safety, and aesthetic value. They assess tree conditions, diagnose diseases, and recommend treatments or preventive measures.
Channel	A natural stream that conveys water, a ditch or channel excavated for the flow of water, or the area where water is concentrated to flow across the landscape (e.g., creeks, rivers, flood control channels, and similar facilities). Channels include creeks and ditches, but do not include culverts, pipes, and other closed structures.

Glossary of Significant Terms

Channel Erosion	Includes the processes of streambank erosion, streambed scour, and degradation.
Channel Stabilization	Any action by Valley Water to repair and prevent scouring or downcutting of stream beds. See “Bank Stabilization.”
Clean Water Act	Federal Water Pollution Control Act of 1973, 33 U.S.C. §§ 1251-1387. A broad federal statute with the goal of maintaining and restoring waters of the United States. See “Waters of the United States.”
Co-dominant	Equal in size and relative importance, usually associated with either the trunk/stems or scaffold limbs/branches in the crown (Matheny and Clark 1994).
Compensatory Mitigation	The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, or preservation of wetlands and other resources to replace those resources impacted by maintenance activities. Specifically, compensatory mitigation is developed expressly for the purpose of compensating for unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization of impacts have been achieved in compliance with law or requirements of regulatory agencies. (Federal Register March 6, 1995, Federal Guidance for the Establishment, Use and Operation of Mitigation Banks.) In the Stream Maintenance Program, compensatory mitigation is mitigation in perpetuity that is to be provided by Valley Water to offset significant residual impacts that cannot be avoided.
Compliance Monitoring	Continuous process that ensures an agency’s compliance with policies and procedures.
Confluence	A meeting of two or more streams or rivers.
Corrective Maintenance	Corrective maintenance describes a group of work activities that are not conducted on a regular schedule but are conducted as needed to correct a specific issue.

Glossary of Significant Terms

Culvert	Any covered structure not classified as a bridge that conveys a waterway under a road or other paved area.
Cumulative Impacts	Changes to the environment caused by the combined impact of past, present, and foreseeable projects.
Cut-Stump Treatment	Elimination of woody vegetation by cutting at ground level and treating the cambium, or outermost plant tissue, with a concentrated, systemic herbicide. Best results are obtained when application of herbicide immediately follows (within minutes) the removal of target vegetation. Trees removed and treated by cut stump are reported as hand removal.
Debris	Debris consists of all non-sedimentary materials deposited in channels, on floodplains, or above top of bank as a result of natural conditions or through human activity, including such materials as downed trees and/or tree limbs, tires, shopping carts, trash, furniture, homeless encampments, and other items.
Debris Basin	A depression formed by the construction of a barrier or dam built at a suitable location to retain natural materials (e.g., rock, sediment, plant material) that can be conveyed along steep hillside streams during high flows. Usually placed in hillside areas where access is better for removing sediment, generally prior to entering urbanized reaches. See also “Sediment Basin.”
Degradation	Process of a channel lowering its elevation through increased erosion, channel bed scour, or down-cutting. A type of fluvial geomorphic instability. See “Aggradation.”
~~**Depauperate**~~	~~An ecosystem that lacks sufficient stored quantities of the chemical elements required for life. Depauperate ecosystems cannot support rapid growth of flora and fauna, high biomass density, or high biological diversity.~~

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Design Capacity	An engineering term used to describe the amount of water that a modified channel was designed to convey. Generally, the design capacity for improved Valley Water facilities is to accommodate the 1-percent or 100-year flood, although this can vary. This is also known as the level of protection. Capacity is measured in cubic feet per second. See “Flood Capacity.”
Design Flood	The maximum calculated discharge intended to be conveyed in the design of a capacity-constructed channel. The maximum level of flood protection used as a criterion in the design of a constructed or improved channel or waterway.
Design Flow	Flow that a facility was designed to convey.
Designated Individual	An individual ~~non-biologist~~ who has been trained by a Valley Water qualified biologist and has shown proficiency in carrying out specific tasks.
Diameter at Breast Height (dbh)	A tree trunk diameter is measured by the standard diameter at breast height (dbh) or approximately 4.5 feet above ground level. The dbh of multistem trees will be calculated by adding the dbh of the individual stems. The dbh of fast-growing multistem trees, such as willows or Acacia, will be calculated by adding the dbh of the individual stems and then dividing by two.

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Downed Tree	A tree that has fallen, often obstructing a trail or path, due to natural causes like weather, age, or disease. Fallen and downed trees, logs, or other debris in Valley Water channels increase hydraulic roughness, either directly or by capturing and trapping additional debris and vegetation, with the result of reducing conveyance capacity. Downed trees may require management through removal or repositioning to maintain a channel's designated flood capacity. Downed trees are evaluated for their potential to cause or increase flooding as well as erosion, bank failure, or negatively impact infrastructure. Downed trees outside of the channel may also result in other undesirable conditions such as blocked access roads and difficulty inspecting levees. Valley Water recognizes that downed trees also provide valuable natural resource benefits and habitat functions.
Drop Structure	A structure designed to convey flows over a vertical distance from a higher to a lower elevation.
Emergency	A situation is considered an "emergency" if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resource Code Section 21060.3). Emergency repair or activities associated with an emergency are not addressed by the Stream Maintenance Program. Most emergency projects are exempt from review pursuant to CEQA (Public Resource Code Section 21080(b)(2), (3), (4)), although there may be post-permitting requirements.
Emergent Vegetation	Non-woody vegetation, including cattail and bulrush, that is rooted in the water but has stems and/or leaves that extend out of the water. For purposes of the Stream Maintenance Program, emergent vegetation and herbaceous vegetation are considered different categories.
Enhancement	The manipulation of a site or feature to heighten, intensify, or improve the resource. Enhancement results in a selective improvement in function and/or value but does not result in a gain in resource area.

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Environmental Impact Report (EIR)	A detailed statement prepared under CEQA describing and analyzing the significant environmental impacts of a project and discussing ways to mitigate or avoid the effects.
Ephemeral	Creek that only flows for short periods of time during or immediately following a rain event.
Erosion	The detachment and movement of soil and rock fragments by water and other geological agents, which results in the wearing away of the land. When water is the eroding agent, erosional processes include sheet and rill erosion, gully erosion, and channel erosion.
Establishment	Creation. The manipulation of a site to develop resource functions and values that did not previously exist at the site. Establishment results in a gain in resource area.
Fish Ladder	A series of artificial, stepped pools that enables fish traveling upstream, against the flow of water, to span a large vertical distance in a series of gradual steps. Used at dams or other in-stream barriers.
Five-Year Mitigated Area (FMA)	Areas where a vegetation management or sediment removal activity has occurred and has been mitigated for under SMP-2. FMAs are considered to be mitigated for that impact activity and location for a period of five years after the initial impact.
Flood Capacity	The flow or volume of water a channel can carry. Capacity is dependent on cross-sectional area and frictional components (e.g., channel vegetation).
Flood Protection Facility	For purposes of the Stream Maintenance Program, any watercourse, whether natural or artificial, in which water does or may flow and that is under ownership or control of Valley Water for flood protection purposes.
Floodplain	The relatively flat area extending from the top of a creek bank away from a creek that may be inundated occasionally during high water events.
Flow Conveyance	Flow that a facility was designed to convey; often dependent on channel cross-sectional properties.

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Flow Rate	Measure of how quickly a volume of water moves in a creek.
Fluvial	Pertaining to rivers.
Follow-up Hand Removal	Generally, removal of dead vegetative material after herbicide application. This work does not need to be reported to regulatory agencies.
Gabion Basket or Mattress	Galvanized wire mesh panels filled with rock, used for structural purposes. They can be connected and used for retaining walls, revetments, or bank stabilization.
Geomorphology	The study of the forms of the earth's surface and the processes that shape them. Fluvial geomorphology involves the study of streams and sediment processes: transport, erosion, storage, and deposition.
Habitat	The specific area where environmental conditions (i.e., physical and biological conditions) are present that are required to support a given species. To be complete, an organism's habitat must provide all the basic requirements of life for that species. Habitat may be occupied (i.e., individuals or a population of the species are or have recently been present) or unoccupied.
Habitat Conservation Plan (HCP)	Plan under the Endangered Species Act negotiated between the federal government and private landowners or state and local governments. These plans are designed to allow landowners to receive a federal permit to unintentionally harm listed species in the course of completing projects. In exchange for a permit, landowners agree to pursue specific management protections for threatened and endangered species. An example of an HCP is the Santa Clara Valley Habitat Plan (VHP).
Hard Structures	A type of bank stabilization structure incorporating rock, rip rap, sack concrete, gabion baskets and mattresses, or concrete. These structures are inert and rigid.

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Hardscape	Concrete, rock, gabions, or other permanent, hard-surface channel or bank treatment. Refers to designs that utilize predominantly hard structures and are generally incapable of supporting vegetation. See "Softscape," "Hybrid," and Table 6-*1 Bank Stabilization Methods*.
Hazard Tree	The combination of a failure of a tree or part of a tree with the presence of an adjacent target. A hazard does not exist if there will not be an impacted target.
Headwaters	The minor drainages in the extreme upper watershed.
Herbaceous Vegetation	Non-woody vegetation, including grasses, broadleaf weeds, cattails, and bulrushes, that is rooted out of the water. This may include annuals, biennials, and perennials. For purposes of the Stream Maintenance Program, emergent vegetation and herbaceous vegetation are considered different categories.
Herbicide	A chemical agent used to control ~~kill plants~~ or inhibit plant growth.
Hybrid	For purposes of the Stream Maintenance Program, bank stabilization projects that combine hardscape and softscape. See "Hardscape," "Softscape," and Table 6-1 *Bank Stabilization Methods*.
Hydraulic	Of or pertaining to the scientific or technical study of the static and dynamic behavior of fluids. Fluvial hydraulics is an engineering discipline geared toward the physics of water flow in channels—its volume, velocity, and elevation—in space and time. Hydraulic analysis is typically used to determine discharge capacity and to assess the effects of channel vegetation on channel capacity.

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Hydrologic Basin	For the purposes of the Stream Maintenance Program, a depression or valley that drains to a common waterbody. In Santa Clara County, there are two major hydrologic basins draining into San Francisco Bay or Monterey Bay. In the northern portion of the county, streams of the Santa Clara Basin drain to San Francisco Bay. To the south, streams in the Pajaro River Basin drain ultimately to Monterey Bay. Each basin comprises several watersheds.
Hydrology	Hydrology is the science (or study) of water in the environment with a focus on the circulation and distribution of water as expressed in the hydrologic cycle or water balance.
Hydroseed	A process for revegetation of large areas. Plant seed, fertilizer, straw mulch, a binding agent, and green dye are mixed in a truck-mounted tank and sprayed through a hose onto the bare ground.
Impact	A strong effect of an action that leads to a change of condition. See “Significant Environmental Impact.”
Impervious Hardscape	Paved areas such as streets and sidewalks, other developed areas, or bank stabilization methods that are impenetrable to water.
Implementation Measure	An action, procedure, program, or technique that carries out policy. Implementation measures provide specific guidance to Valley Water managers and staff in the environmental review and processing of routine stream maintenance projects.
Inboard	The inboard side of a levee or streambank is the side sloping toward the channel.
In-channel/In-stream	For the purposes of the SMP Update, inboard levee toe to the opposite inboard levee toe. Where there is not a levee, inboard toe of the stream, ordinarily associated with “channel bottom” (see “bankfull bank”)

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In-Kind Repair	For the purposes of the Stream Maintenance Program, in-kind repair refers to repair of structures with similar materials within the same footprint. ~~maintenance of a bank stabilization structure with in-kind, in-place materials. This type of maintenance occurs when such structures fail.~~
Inlet	An arrangement for conveying surface water into an underdrain, pipe, culvert, or channel.
Instream Vegetation Removal	Physical removal of vegetation from the instream area using hand tools or other mechanical means.
Intermittent Stream	A stream that has flowing water only during certain times of the year. During dry periods, an intermittent stream may not have flowing water.
Invasive Plant	~~An invasive plant species is either native or non-native that causes concern in native ecosystems. An invasive plant species that reproduces rapidly and has the ability to spread aggressively outside its natural range, since the normal pressures of disease and predation which typically keep a populations growth in check are not present.~~ A non-native plant that, once introduced, establishes, quickly reproduces and spreads, and cause harm to the environment, economy, or human health. Invasive plant species may alter ecological processes such as pollination patterns, nutrient cycling, and fire regimes, and may modify canopy architecture, causing a loss of cover, nesting and foraging habitat for wildlife species. Invasive plants' a~~A~~ggressive growth patterns often outcompete ~~with~~ native plant species. For purposes of SMP, invasive plants are those species which are listed as invasive in Chapter 4 of the SMP Manual.
Invasive Species	~~A plant or animal that aggressively spreads outside its native range.~~ A plant and/or wildlife species that is non-native or alien to the ecosystem and whose introduction causes or is likely to cause environmental harm. See "Invasive Plant."

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Invert	The lowest point of the internal cross section of a pipe, culvert, or channel; the elevation of the bottom of the channel. (See “In-Channel/Instream.”)
Lacustrine	Of or pertaining to a lake.
Lateral Branch	A secondary or subordinate branch of a tree or shrub arising from a larger limb or trunk (Harris et al. 2004).
Levee	An embankment constructed to prevent a river or stream from flowing across adjacent lands.
Levee Toe	The point on a levee slope where the designed and constructed levee ends and natural ground begins.
Levee Top	Top area of a levee between inboard and outboard. Generally flat, but not necessarily coinciding with a levee road.
~~**Limb Removal**~~	~~The cutting of a branch greater than 4 inches in diameter.~~
Listed Species	A species that is formally designated as endangered or threatened or rare by the state or federal Endangered Species Act.
Long-Term Permit	A non-specific term referring to permits, authorizations, or memorandums of understanding from the U.S. Army Corps of Engineers, Regional Water Quality Control Boards, State Water Resources Control Board, Bay Conservation and Development Commission, and California Department of Fish and Wildlife that are effective for a specified period of time (e.g., 5 or 10 years) or an indefinite period.
Lower Watershed	Generally the watershed below (downstream of) a reservoir, including the main channel and outlet to the Bay.
Low-Flow Channel	A section of stream that carries the more frequent, periodic streamflows.

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Maintenance Guidelines	Engineering documents that give guidance on maintenance requirements for design flow conveyance capacity of Valley Water flood protection facilities. The guidelines may include design details, historical information, or special requirements for a reach of channel.
Marsh Master	A mechanized vegetation management vehicle with low ground pressure used for aquatic plant control in wetland, marsh, and floodplain ~~marsh~~ areas. The Marsh Master can be fitted with multiple attachments for mowing, cutting, discing, and applying herbicide.
Mean High Water (MHW)	In San Francisco Bay, there are two high tides each day, usually with different elevations. Mean high water is defined as the average height of these two tides.
Mean Higher High Water (MHHW)	The average height of the higher of the two high tides in San Francisco Bay.
Mitigation	Valley Water's Board of Directors has adopted the following definition: Action taken by Valley Water to fulfill CEQA/NEPA permit requirements and court-mandated mitigation to avoid, minimize, rectify, or reduce adverse environmental impacts, or to compensate for the impact(s) by replacing or providing substitute resources or environments.
Modified Channel	A waterway in which engineered alterations have occurred to improve the passage of flood flows or to provide drainage. This includes straightening (or channelization), containing a watercourse within constructed banks or levees, or lining banks with concrete, rip rap, gabions, or sack concrete.
Multi-Stem	A tree or shrub with a root ball and multiple trunks or stems. This may occur at ground level or several feet above ground. The dbh of trees with multiple stems will be calculated by adding the diameters of the individual stems at 4.5 feet above ground.
Natural Channel	A watercourse without any significant improvements or modifications and very little evidence of historical alterations. See also "Unmodified Channel."

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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.
Non-Jurisdictional	Areas outside permitting authority of a resource agency.
Non-Native Plant	For SMP purposes, any plant species which is thought to have not been present in Santa Clara County prior to the mid-1500s CE and which was introduced by human activity. ~~A plant species that, under natural conditions, does not originate within the ecosystem in which it is found. See "Invasive Plant."~~
Obstruction	Material or objects that impede a facility from operating appropriately.
Ordinary High Water (OHW)	In non-tidal areas, the highest level of water in a channel reached by commonly experienced flows. Defines the limit of the U.S. Army Corps of Engineers jurisdiction in the San Francisco Bay Area as the water level reached by flood flows with a predicted recurrence interval of 2.33 years.
Ordinary High Water Mark (OHWM)	Defined by the U.S. Army Corps of Engineers as the line on the bank established by the fluctuations of water indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.
~~**Orographic**~~	~~The effect that occurs when an air mass is forced from a low elevation to a higher elevation as it moves over rising terrain. The air mass cools, its relative humidity increases, and clouds may form.~~
Outboard	The outboard side of a levee or streambank is the side sloping away from, and outside of, the channel.

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Outfall	The end of a pipe or culvert that delivers local drainage into a creek. Features associated with an outfall structure may include erosion control materials, such as rip rap or an energy dissipater below the culvert. Further, a valve, such as a flap gate, may also be part of the outfall.
Overhanging Growth	Vegetation growth that is hanging over maintenance roads and fence lines. Routine pruning of overhanging growth is a vegetation management activity.
Palustrine	Marsh-like.
Perennial Plant	A long-lived plant that typically has well-developed roots and above-ground structures. May include herbaceous plants, vines, shrubs, and trees.
Perennial Stream	A stream that has continuous flow of surface water throughout the year in a typical year.
Permanent Wetland Impact	A direct impact in which the wetland is not restored to pre-project conditions within 2 years.
Pervious Hardscape	Hardscape, such as rock rip rap, gabions, and cellular soil confinement, that is not a barrier to water infiltration and that may allow (limited) revegetation growth.
Plant Pathogen	Any organism that causes plant disease.
Policy	~~Statement/commitment made by the Board of Directors describing a condition or course of action.~~ A principle of action guiding decision-making, both for individual stream maintenance projects and for the implementation of other related programs and projects. Policies are commitments made by Valley Water's Board of Directors.
Post-Emergent Herbicide	An herbicide designed to control target plant material after it has sprouted or following a dormant period. Post-emergent herbicides control plants by disrupting various growth mechanisms.
Preconstruction Survey	A review of the existing conditions of a site prior to the beginning of construction activity.

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Pre-Emergent Herbicide	An herbicide designed to control target plant material prior to germination. Pre-emergent herbicides are applied to the soil surface, watered in through rainfall or artificial irrigation, and prevent germination and growth of seeds in the upper soil strata.
Preservation	The setting aside of an existing site to protect a resource or prevent the decline of a resource through legal or physical mechanisms. Preservation does not result in a gain of resource area or function.
Preventative Maintenance (PM)	Work activities that are conducted on a regular schedule (most often annual or biannual) to avoid facility degradation.
Permanently Mitigated Area (PMA)	An area where impacts for a particular activity were mitigated for in perpetuity during SMP-1. Work of the same activity done under SMP-3 within the PMA does not incur additional mitigation debt.
Program	A series of actions that can be described at a general level of detail. Programs include agency plans, policies, and regulatory programs.
Project Area	The area within Santa Clara County that is subject to routine Stream Maintenance Program activities. The project area includes streams and any adjacent property that Valley Water owns or for which it holds an easement for access and maintenance. Valley Water does not provide maintenance on private property when no easement exists.
Protocols	An established set of ground rules or procedures governing routine stream maintenance activities.
Qualified Biologist	A qualified biologist is a professional biologist with a minimum of a Bachelor's degree in biology, ecology, botany, zoology, or a related discipline and at least one year of experience as a professional biologist involving a substantial amount of field work (an appropriate Master's degree with a substantial field component may substitute for work experience). The qualified biologist's education and experience will be appropriate to the species and task that they are working on.

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Reach	The smallest subdivision of a drainage system consisting of a uniform length or a discrete portion of a channel.
Recharge	The replenishment of groundwater aquifers by infiltration.
Re-establishment	Manipulation of a site with the goal of returning natural/historic functions. Re-establishment results in rebuilding former resources and results in a gain in resource area and function.
Regrowth	The growth of vegetation following disruptive activities, such as trimming of vegetation or sediment removal.
Rehabilitation	Manipulation of a site with the goal of repairing natural/historic functions. Rehabilitation results in a gain in resource function but does not result in a gain in resource area.
Residual Impact	Significant environmental impact that cannot be avoided through the implementation of feasible site-specific measures. A significant residual impact can be offset through provision of compensatory mitigation.
Restoration	Valley Water's Board of Directors has adopted the following definition, "Action taken by Valley Water, to the extent practicable, toward the re-establishment of an ecosystem's pre-disturbance structure, function, and value, where it has been degraded, damaged, or otherwise destroyed." The re-establishment of the structure and function of an ecosystem to a former or degraded site. Ecological restoration is the process of returning an ecosystem as closely as possible to pre-disturbance conditions and/or functions and values. Implicit in this definition is that ecosystems are naturally dynamic. It is therefore not possible to recreate a system exactly. The restoration process reestablishes the general structure, function, and dynamic but self-sustaining behavior of the ecosystem.
Revetment	A term used to describe any number of hard structures used in bank stabilization.

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Rip Rap	Loose rock or concrete of varying size, typically brought to a site. Used to protect channel banks from scouring forces.
Riparian	Located along the edge of a channel, generally on the floodplain. Characterized by access to and influence of the channel, but not in it. A riparian zone or riparian area is the interface between land and a river or stream.
Riparian Corridors	A biological zone dominated by riparian vegetation immediately next to a channel. See also “Riparian Vegetation.”
Riparian Vegetation ~~(or Habitat)~~	~~Riparian habitat is composed of~~ tThe trees and other vegetation ~~and physical features~~ normally found on the stream banks and flood plains associated with streams, lakes, or other bodies of water.
Riverine	Of, related to, or growing in rivers and streams.
Rootwad	A tree stump (dead or alive) with attached roots. May be used during restoration activities.
Roughness	Coefficient used in Mannings equation, the measure of the amount of frictional resistance water experiences when flowing through a creek.

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Routine Stream Maintenance	Routine stream maintenance includes five main activities, as follows: (1) sediment removal activities that are designed to restore the design flow conveyance capacity of existing Valley Water channels or associated features (e.g., tide gates); (2) vegetation management in and around ~~the~~ Valley Water's channels, including removal of vegetation for access and fire control; (3) bank stabilization activities necessary to protect Valley Water or other facilities; (4) downed tree management (including large woody debris); and (5) management of animal conflicts. Routine stream maintenance also includes more minor maintenance activities, such as trash removal; fence work; access road maintenance; repair of structures with in-kind materials within the same footprint (such as replacement of concrete linings, culverts, pipes, valves, or similar structures); cleaning and minor sediment removal at stream ga<u>u</u>ges, outfalls, flap gates, tide gates, fish ladders; and graffiti removal. Routine maintenance does not include emergency work.
Ruderal	Vegetation containing mostly introduced, weedy herbaceous species; "disturbance-loving" species. Common in disturbed areas, along roadsides or in vacant lots.
Runoff (Surface)	The flow of water across the land surface and in stream channels. Occurs only after the local storage capacity or infiltration rate of the landscape has been exceeded and includes both overland flow and streamflow.
Salmonid	Any member of the fish family Salmonidae.
Scour	The clearing and digging action of flowing air or water, especially the downward erosion caused by stream water in removing material (e.g., soil, rocks) from a channel bed or bank or around in-channel structures.

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Secondary Channel	For purposes of the Stream Maintenance Program, secondary channels are constructed features of a main channel that are designed for flood conveyance or maintenance purposes. These channels often have maintenance requirements that are different than the main channel and are therefore specifically managed and reported separate from the main channel.
Section 404	Refers to a section of the Clean Water Act establishing a permit program for the discharge of dredged or fill materials into Waters of the United States.
Sediment	Particles derived from rocks or biological materials that have been transported by a fluid, or solid material suspended in or settled from water.
Sediment Basin	A depression formed by the construction of a barrier or dam built at a suitable location to retain rock, sand, gravel, silt, or other material. In Valley Water, these basins also are commonly called “Debris Basins.”
Sediment Load	The sediment that is in transport. Load is a general term that refers to material in suspension and/or transport. It is not synonymous with discharge.
Sediment Removal	The act of removing sediment deposited within a stream. Typically, sediment is removed when it reduces capacity. This is the sediment removal activity referred to most often in the Stream Maintenance Program. There is a subset of sediment removal that is conducted for removing sediment 25 cubic yards or less. This latter category of sediment removal is considered “minor maintenance.”
Sensitive Habitat	A general term used to characterize habitats that either support sensitive species (listed species, species proposed for listing, and species of special concern) or are designated as a sensitive natural community in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.

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Sensitive Species	A general term for listed (i.e., on a state or federal endangered species list) species, species proposed for listing, and species of special concern (other species that may be of concern to state or federal agencies).
Shaded Riverine Aquatic (SRA) Habitat ~~(SRA)~~	The aquatic area occurring along the edge of a channel where the adjacent bank is composed of natural materials and supports riparian vegetation that overhangs or protrudes into the water and provides fish and other aquatic species habitat.
Shear Stress	The force tending to cause deformation of a material by slippage along a plane or planes parallel to the imposed stress.
Shrub	Woody plant smaller in height than a tree (less than approximately 16 feet [5 meters] at maturity), often formed by a number of vertical or semi-upright branches arising close to the ground.
Significant Environmental Impact	A significant environmental impact is a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (State CEQA Guidelines, CCR Title 13 Chapter 3, Sections 15358 and 15382).
Significant Rainfall	Local rainfall 0.5 inches or greater within a 24-hour period in the subject watershed, below the 1,000-foot contour (SMP area).
SMP-1	Valley Water's previous Stream Maintenance Program for 2002–2012.
SMP-2	Valley Water's current ~~previous~~ Stream Maintenance Program for 2013–2023~~6~~.
SMP-3	Valley Water's proposed ~~current~~ Stream Maintenance Program for 2027–2036.
Soft Structures	A type of bank stabilization structure incorporating biological materials, such as seeds, plants, plant parts (e.g., root wads), or a combination of vegetation and inert materials (e.g., brush mats/sills, wattles, fascines, or branch packing/layering).

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Softscape	Earth channel or levees, either natural or modified, that generally do not incorporate hardscape structures. Also refers to “soft forms of bank stabilization” such as root wads, log structures, etc. (See “Hardscape,” “Hybrid,” and bank stabilization table.)
Spawning Gravel	Rocks and pebbles deposited in stream beds that are just the right size for anadromous fish to move about as they lay their eggs.
Station	Station is a standard channel location system. Distances are measured from the mouth of creeks or from the confluence of a tributary heading upstream. Distance is measured in feet. For example, station 43+56 would be a point 4,356 feet upstream from the mouth of the channel.
Stewardship	The careful and responsible management of the environment and natural resources into one’s care for the benefit of the greater community.
Stream	For the purposes of the Stream Maintenance Program, “streams” are defined as the natural watercourses and modified channels within Valley Water’s jurisdiction. In this Program, streams include both the waterway and its immediate geographical corridor, including riparian corridors.
Stream Maintenance Program	A multi-year program providing long-term guidance to Valley Water to effectively implement routine stream maintenance projects in a cost-effective and environmentally sensitive manner. The Stream Maintenance Program is to be codified in a process and policy document that can be adopted by Valley Water and utilized in obtaining long-term permits from regulatory agencies. The Stream Maintenance Program includes specific measures, protocols, and monitoring and reporting requirements to achieve the above objectives.
Stream Maintenance Project	For the purposes of the Stream Maintenance Program, a project is the whole of a set of routine stream maintenance actions that are along the same channel reach. A project has a specific location, duration, and purpose.

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Streambed	The part of a stream over which a column of water moves.
Sudden Oak Death	The common name of a disease caused by *Phytophthora ramorum*. The disease kills oak and other species of tree.
Suitable Habitat	Habitat that features ecological characteristics that may provide for the breeding and or foraging of a species.
Surfactants	A shorthand term for surface-active agent, which are chemicals that modify surfaces of two liquids or a liquid and a solid. In the context of the Stream Maintenance Program, surfactants are used in combination with herbicides to increase the retention and penetration of herbicides on and into plants.
Suspended Sediment	Fine particles suspended in the water column and carried along with the water at the velocity of flow. Compare with “Bedload.”
Take (of a Listed Species)	To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a listed species or its habitat, or to attempt to engage in any such activity.
Temporary Wetland Impacts	Impacts in which the wetland is fully restored to pre-project conditions within two years.
Terrace	A flat or slightly sloped area which is adjacent to a stream channel and which is above ordinary high water (OHW) (also known as a bench).
Thalweg	Main channel in the creek.
Toe	The base of a slope.
Tree	A species of woody perennial that typically has one dominant vertical trunk and a height greater than 15 feet in its natural, mature form. Several exceptions to this definition exist; willows and elderberries are two examples found in the Stream Maintenance Program area which are considered trees for the purposes of the Program, but which may not have a single dominant trunk.

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Trimming	The removal of branches of a plant, usually a woody perennial.
Turbidity	The pollution of water by dissolved or suspended solids. The cloudiness of water, caused by suspended sediment. Turbidity is measured by the degree to which light penetration is blocked because the water is muddy or cloudy.
Unavoidable Impact	An unavoidable impact would occur if specific economic, social, legal, technical, or other considerations make mitigation measures or alternatives for the impact of a project infeasible. When such impacts are considered "significant," to support its decision on a project for which an EIR was prepared, a Lead Agency must prepare written findings the identify that either (1) changes to the project are within another agency's jurisdiction and have been or should be adopted, or (2) specific economic, social, legal, technical, or other considerations make mitigation measures or alternatives infeasible (State CEQA Guidelines Section 15091). In addition, the Lead Agency must adopt a Statement of Overriding Considerations which describes how the benefits of the project outweigh the unavoidable adverse environmental effects (State CEQA Guidelines Section 15092, 15096(h)).
Unmodified Channel	Channels that generally are unchanged from historic conditions. Unmodified channels may have small areas of modification, including bridges, outfalls, culverts, gauges, or other appurtenant structures. See also "Natural Channel."
Unvegetated	Areas containing either no, or only ruderal, vegetation.
Upland	Areas above the normal reach of streams or rivers and characterized by non-wetland vegetation.
Upper Watershed	Generally, the steeper portion of a watershed, above reservoirs and above urban areas.
Velocity	Speed with which water flows in a channel.

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Vegetation Management/Removal	Removal of vegetation in and adjacent to Valley Water facilities in alignment with one of the Stream Maintenance Program's vegetation management purposes.
Vegetation Removal <6 inches dbh	The complete removal of above-ground portions of any individual plant or tree with a dbh less than 6 inches. Cut stump treatment or foliar herbicide is a paired activity with vegetation removal <6 inches dbh and is assumed to occur unless otherwise noted on the work order.
Waste Discharge Requirement	A legal mechanism of the state and Regional Water Quality Control Boards to regulate discharges of dredge or fill materials.
Waters of the United States	Tidal waters, all interstate waters, including wetlands, and all other waters including tributaries to streams and rivers which could involve interstate or foreign commerce.
Watershed	Entire area that drains to a common stream, synonymous with drainage area. Valley Water's streams are typically divided into five watersheds: Lower Peninsula, West Valley, Guadalupe, Coyote, and Pajaro.
Weir	A dam, wall, screen, or other structure in a waterway for the purpose, diverting, screening, or measuring water.
Wetlands	Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland is characterized by having the appropriate plant species (dependent on or capable of surviving root saturation), the appropriate hydrology (predictable saturation), and soils reflecting saturation and periodic anaerobic conditions.

Glossary of Significant Terms

Winterization	The process to maintain project sites with the appropriate best management practices (BMPs) 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 inch or greater of rainfall within 24 hours in the subject watershed. Winterization shall be completed, when feasible, prior to the occurrence of such actual significant rainfall.
Woody Vegetation	Live vegetation having a stiff trunk or branch structure that is inflexible and does not bend over in flows. Typical vegetation types include trees and large shrubs.
Work Sites	The locations where maintenance activities are anticipated to occur. For SMP-3, such locations have been identified for the 2027-2036 timeframe.

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CHAPTER 1. INTRODUCTION

Santa Clara Valley Water District (Valley Water) manages approximately 333 miles of streams and channels across Santa Clara County under its Stream Maintenance Program (SMP or Program). The SMP uses a balanced approach to maintain these waterways for flood protection, while planning and implementing routine maintenance activities with the goal of avoiding and minimizing potential impacts on the environment.

Valley Water serves nearly 2 million people in Santa Clara County by providing a reliable and safe supply of water; enhancing streams and watersheds through creek restoration and habitat protection; providing flood protection for homes, schools, and businesses; and partnering with other agencies to provide trails, parks, and open space for community recreation. Valley Water's mission is to:

Provide Silicon Valley with safe, clean water
for a healthy life, environment, and economy.

Initially developed in 2001 to define and improve management and maintenance of Valley Water's flood protection channels and streams, the SMP provides the organizational framework for overseeing channel maintenance in compliance with applicable regulatory permits. The SMP is flexible, subject to periodic revisions that reflect improved understanding of resource conditions, maintenance technologies, and management practices.

This introductory chapter provides background information about the SMP and describes the Program's goals, objectives, planning principles, Program area, and an overview of SMP activities.

ABOUT THIS MANUAL

Valley Water updates the SMP Manual periodically in collaboration with state and federal permitting agencies to address permit renewals, environmental conditions, or changing maintenance needs. This updated 2027–2036 SMP Manual (referred to as "Program Manual") addresses the third 10-year period of the SMP (from 2027 through 2036) and wholly replaces the previous Program Manual and supporting documents. It is intended for use by Valley Water maintenance staff, engineers, and resource managers, as well as by environmental regulatory agency staff and other watershed stakeholders. The manual defines the overall maintenance program and describes authorized maintenance activities to be conducted as permitted by the relevant regulatory agencies. It also describes the SMP's regulatory framework, annual maintenance planning process, impact avoidance measures, best management practices (BMPs), mitigation approaches, work locations, and monitoring requirements.

SMP permits should be consulted for additional information with regard to agency -specific requirements, particularly those that pertain to notification and compensatory mitigation requirements, including mitigation monitoring, success criteria, and reporting. The initial SMP (referred to as "SMP-1") included work projections for 2002–2012. The SMP-1 Manual and Final Environmental Impact Report (FEIR) were approved and certified in 2002 and used a 20-year planning horizon to evaluate cumulative impacts. The evaluation of SMP environmental impacts for the second 10-year period, 2013~~4~~–2023 (referred to as "SMP-2"), was addressed through a Subsequent Environmental Impact Report (SEIR) and was developed in compliance with the California Environmental Quality Act (CEQA). The SMP-2 Manual and FEIR were approved and

certified in 2012. The permits for SMP-2 have been extended and are now valid through 2026. An SEIR for SMP-3 will be circulated for public review in 2025 that will evaluate the environmental impacts associated with Valley Water's anticipated maintenance activities for 2027–2036.

The updated SMP manual is comprised of 11 chapters, as follows:

Chapter 1. Introduction

This chapter provides an overview of the SMP goals and objectives, planning principles, the Program area, a brief description of the SMP activities, and general applicability of the Program.

Chapter 2. Environmental Agencies and Regulatory Framework

This chapter describes the relevant regulations and permit processes that Valley Water will use to obtain SMP authorization from various federal, state, and regional environmental agencies.

Chapter 3. Maintenance Planning and Impact Avoidance

This chapter describes how measures to avoid and reduce impacts are incorporated into Valley Water practices.

Chapter 4. Vegetation Management

This chapter describes Valley Water's integrated vegetation management approach. This approach ensures that the most effective technique is used in a manner that minimizes impacts to the environment while meeting flood protection, fire safety, maintenance access, infrastructure protection, and other legal requirements.

Chapter 5. Sediment Removal

This chapter provides information on the mechanical removal of accumulated sediment from creek channels, including triggers, assessment, requirements, access, and BMPs.

Chapter 6. Bank Stabilization

This chapter provides information on SMP-permitted work to repair and stabilize eroding channel banks and levees to prevent bank failure, reduce instream sedimentation, and protect water quality and riparian habitat.

Chapter 7. Management of Animal Conflicts

This chapter provides details on work activities, work sequencing, methodologies, requirements, and BMPs with regard to animal conflict management.

Chapter 8. Minor Maintenance Activities

This chapter describes a set of routine, small-scale maintenance activities that have limited environmental impacts.

Chapter 9. Downed Tree Management

This chapter describes Valley Water's approach to managing downed trees. Sections include the downed tree evaluation process, work activities, requirements, and BMPs.

Chapter 10. Mitigation Program

This chapter describes Valley Water's approaches to mitigating unavoidable impacts to wetlands and waters of the U.S./State, riparian habitat, and habitat supporting special-status species.

Chapter 11. Program Management and Reporting

This chapter provides information on the SMP management and reporting process, including the annual planning process and work cycle; pre–work--season Notice of Proposed Work (NPW); post–work-season Annual Summary Report (ASR); data management system; and additional SMP-3 planning and subsequent permit renewal processes.

In addition, the following separate attachments provide in-depth information on various technical topics:

Attachment A. Best Management Practices
Attachment B. Permanently Mitigated Areas
Attachment C. Special-status Plant and Animal Species with Potential to Occur in the Program Area and SMP Work Areas
Attachment D. Bank Stabilization Methods
Attachment E. Water Quality Monitoring Plan
Attachment F. Sediment Characterization Plan
Attachment G. Steelhead Impact Minimization Measures
Attachment H. Stream Maintenance Fish Ladder Inspection Form
Attachment I. Annual Notification of Proposed Work Report (template)
Attachment J. Annual Summary Report (template)

1.1 VALLEY WATER ENDS POLICIES

Ends Policies are established by Valley Water's Board of Directors to guide Valley Water to achieve its mission. Maintaining creeks and channels under the SMP is an integral part of this mission. Relevant Ends Policies that guide the SMP include the following:

E-3 Natural Flood Protection: Natural flood protection is provided to reduce and improve health and safety for residents, businesses, and visitors now and into the future.

Goal 3.1 Maintain flood protection facilities to design levels of protection.

Objective 3.1.1 Prioritize maintenance of existing facilities over construction of new capital projects.

Objective 3.1.2 Inspect and maintain facilities on a regular basis.

Objective 3.1.3 Perform maintenance using maintenance guidelines updated on a regular basis.

E-4 Water Resources Stewardship: Water resources stewardship protects and enhances ecosystem health.

Goal 4.1 Use a science-based, inclusive approach to protect Santa Clara County's watersheds and aquatic ecosystems for current and future generations.

Objective 4.1.1 Develop and share data to support resilient ecosystems and healthy populations of native species.

Objective 4.1.2 Monitor stream, reservoir, and Bay ecosystem health.

Objective 4.1.3 Use data to prioritize and equitably implement actions to reduce pollution, restore endangered species habitat, and enhance ecosystem function.

Goal 4.2 Sustain ecosystem health while managing local water resources for flood protection and water supply.

Objective 4.2.1 Plan and design projects with multiple benefits, including protecting ecosystem functions, enhancing habitat, and improving connectivity, equitably in all regions of the county.

Objective 4.2.2 Operate Valley Water facilities to balance water supply, flood protection, and ecosystem sustainability.

Goal 4.3 Encourage inclusive, sustainable management of water resources in the Bay-Delta and its watersheds to protect imported water supply.

Objective 4.3.1 Meet future water supply demand through diverse and coordinated water supply planning.

Objective 4.3.2 Promote holistic ecosystem management through science-based decision-making.

Objective 4.3.3 Actively engage in the protection of source water quality through collaboration and funding.

Goal 4.4 Prevent and address pollution of local streams, reservoirs, and the Bay equitably across all communities. Protect waterbodies from pollution and degradation.

Objective 4.4.1 Encourage stormwater capture, treatment, and reuse.

Objective 4.4.2 Prepare and respond to spills and dumping that threaten local waterways.

Objective 4.4.3 Collaborate with agencies and nonprofits to address homelessness, including supporting the provision of affordable housing by these agencies and nonprofits, and its impacts to Santa Clara waterways.

Valley Water Ends Policies and Board Appointed Officer Interpretations are periodically reviewed and updated. Please check the Valley Water website for the most current Governance Policies.

1.2 STREAM MAINTENANCE PROGRAM GOALS AND OBJECTIVES

1.2.1 Program Goals

Under the SMP, Valley Water conducts routine maintenance work needed to preserve flood conveyance capacity and maintain Valley Water lands. The SMP integrates the guiding principle of resource management protection directly into its activities. Program elements are designed to avoid, minimize, or mitigate potential impacts in balance with the need to conduct work in streams to carry out Valley Water's mission.

SMP activities are designed to meet two primary goals:

1. Maintain the flow conveyance capacity of Valley Water channels and flood protection facilities to reduce flood risks and ensure public safety, and

2. Maintain the structural and functional integrity of Valley Water flood protection facilities and lands.

Valley Water aims to maintain the flow conveyance capacity of a channel, creek, or other flood management facility to the designed conveyance capacity. In the event a facility does not have a designed capacity, or the designed capacity is unknown or uncertain, Valley Water will maintain the channel, creek, or facility to an appropriate capacity to reduce the risk of flooding. Section 3.7, Maintenance Guidelines, provides additional information about the criteria and thresholds used to determine when maintenance is necessary.

1.2.2 Program Objectives

The following objectives are used to meet SMP goals:

1. Remove the necessary sediment to provide flow conveyance and safety while maintaining the habitat functions of creek systems;

2. Manage vegetation for flow conveyance, for fire code compliance and to reduce the fire fuel loads and wildfire risk, and for public safety, while maintaining the habitat functions and ecosystem health of creeks, channels, and other Valley Water facilities;

3. Manage vegetation to allow levee inspections and access to maintenance work sites;

4. Stabilize eroding stream and channel beds and banks to protect existing infrastructure, maintain public safety, reduce sediment loading, protect water quality, and protect habitat values; and

5. Avoid, minimize, or mitigate impacts on the environment by identifying and prioritizing when maintenance work is necessary and incorporating stream stewardship measures to further reduce potential impacts and enhance function where possible.

1.3 STREAM MAINTENANCE PLAN PLANNING PRINCIPLES

SMP planning principles protect natural resources while maintenance work is conducted under the SMP. Program-specific BMPs are used to implement these principles and avoid and minimize potential environmental effects. Program BMPs are provided in **Attachment A**. Additionally, Valley Water implements Valley Habitat Plan (VHP) conditions described in documents such as the Santa Clara Valley Habitat Plan Conditions Implementation Guide (County of Santa Clara Department of Planning 2015) and/or other relevant VHP guidance to further avoid and minimize potential impacts to the natural environment.

SMP planning principles are also used to identify and prioritize work activities and guide maintenance work decisions. The following SMP planning principles help address Program objectives and comply with Valley Water's Ends Policies:

Principle 1: Valley Water will implement all SMP activities according to the methods and protocols described in the 2027–2036 SMP Manual, forthcoming SEIR, SMP-3 permits, and other supporting documentation.

Principle 2: Valley Water determines the necessity of sediment removal and vegetation management activities to restore established or calculated channel flow capacities. Maintenance Guidelines (Section 3.7) are used to direct sediment removal and vegetation management activities according to specific thresholds and criteria described in this Manual's activity chapters. Where Maintenance Guidelines have not yet been updated or developed, Valley Water relies on record drawings or uses

existing channel reach dimensions and runs hydraulic models to guide sediment and vegetation management activities.

Principle 3: Valley Water implements measures to avoid or minimize impacts on natural resources, including native species and their habitats.

Principle 4: Valley Water performs maintenance activities in a manner that minimizes impacts on the natural flora, fauna, and aquatic resources while meeting SMP objectives.

1.4 PROGRAM OVERVIEW

1.4.1 Program Area

The general SMP area includes Santa Clara County below the 1,000 -foot elevation contour in both the Santa Clara and Pajaro stream basins, as shown in Figure 1-1. However, Valley Water does not work in or maintain all channels and creeks beneath the 1,000-foot contour, but a much smaller subset of channels and streams (see stream maps in Figures 1-2 through 1-6 at the end of this chapter). Activities are generally limited to locations where Valley Water has land rights, totaling approximately 333 miles of creek. This includes lands where Valley Water owns property in fee title, has an easement, or has maintenance obligations pursuant to effective licenses and agreements.

Municipalities within the SMP area that contain Valley Water–owned or maintained channels include the cities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale and the towns of Los Altos Hills and Los Gatos. Valley Water generally does not conduct maintenance on other public or private property where no easement exists, unless otherwise authorized for urgent flood protection purposes.

1.4.2 General Applicability

The SMP applies to all of Valley Water's routine stream maintenance activities, which are grouped into the following six main categories:

- Vegetation management,
- Sediment removal,
- Bank stabilization,
- Management of animal conflicts,
- Minor maintenance activities, and
- Downed tree management.

Routine stream maintenance includes generally anticipated and expected annual work activities that are described in this manual and the SMP-3 SEIR. As described in Chapter 3, Maintenance Planning and Impact Avoidance, routine stream maintenance includes activities and procedures that are conducted to Valley Water's standards and are performed regularly and often repeatedly. Annual maintenance activities may vary from year to year based on annual rainfall, stream flow, vegetation growth, and other environmental factors. Infrequently, maintenance activities may occur on sites where Valley Water has no fee title or existing easement, permit requirement, or other

agreement. For example, Valley Water may perform urgent flood protection work on other public or private property where a public purpose is endangered, and it is safe to conduct the work. While annual maintenance needs and locations may vary from year to year, the work activities conducted annually are consistent with the activities described in this manual.

In planning for each 10-year SMP period (2002–2012, 2013~~4~~–2023, and 2027–2036), a Valley Water team with expertise in creek conveyance requirements developed maintenance work projections for the respective Program period. The projections estimate work type, frequency, location, and extent. The 2027–2036 work projections were used as a basis from which to evaluate potential environmental impacts for the 2027–2036 work period.



N

0 5 10 Miles

Elevation (feet)

- Below Sea Level
- 0 - 10
- 10 -20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 100
- 100 - 250
- 250 - 500
- 500 - 1,000
- 1,000 - 1,500
- Above 1,500

- County Boundary
- Major Hydrologic Features
- Major Roads
- Upper Elevation Boundary of SMP
- Watershed Boundaries

Figure 1-1
Program Area

MONTROSE ENVIRONMENTAL

Santa Clara Valley Water District
SMP3 Manual

1.4.3 Stream Maintenance Activity Descriptions

Vegetation Management

Vegetation management is intended to maintain access, flow conveyance, flood protection, and public safety in Valley Water's channels and rights-of-way. Vegetation management includes trimming, thinning, or removing vegetation that causes flow blockages, traps debris, or significantly increases hydraulic roughness, thereby reducing channel conveyance capacity. Vegetation management is also conducted to reduce fire fuel loads, preserve levee integrity, and provide inspection visibility and access to Valley Water facilities. Vegetation management is also conducted for purposes of ecological health and stewardship, invasive plant management, and restoration site maintenance. Vegetation management methods include pruning, hand or mechanical vegetation/tree removal, herbicide application, mitigation site maintenance, mowing, coppicing, and grazing.

Sediment Removal

Sediment removal is the act of mechanically removing excessive sediment that has been deposited within a flood protection channel. Sediment removal is required when accumulated sediment reduces a channel's flow conveyance capacity, prevents facilities or appurtenant structures from functioning as intended, impedes fish passage and access to fish ladders, and/or blocks access to Valley Water facilities. Sediment is removed to restore channel capacity and minimize the flood hazard in accordance with the existing channel design (as available). Sediment removal under the SMP does not include increasing a channel's flow conveyance capacity beyond the as-built channel design or maintenance baseline.

Bank Stabilization

The SMP includes stabilizing and repairing eroding stream channel beds, banks, and levees. Although bank stabilization is routine and expected, specific work locations are not predictable. Therefore, this type of maintenance is not a projected work activity. Rather, bank stabilization maintenance needs are assessed annually on an as--needed basis. Bank stabilization can be performed in any creek where Valley Water owns fee title or easement or where required by permits or agreements, unless specifically excluded under the SMP. Valley Water limits the use of impervious hardscape materials for bank repair activities.

Management of Animal Conflicts

Valley Water manages animal damage and conflicts in its channels. Animals may damage Valley Water facilities by burrowing into levees or channel banks, foraging at mitigation sites, and/or interfering with work activities. Maintenance work is conducted to repair Valley Water facilities damaged by animals or to prevent animal conflict issues.

Minor Maintenance Activities

Minor maintenance activities include fence repairs; access road maintenance; debris and trash removal; trash boom maintenance; routine work at maintenance yards; sediment removal of 25 cubic yards or less at outfalls, culverts, flap gates, tide gates, inlets, grade control structures, bridges, and streamflow measuring stations; and other minor maintenance activities that are necessary to maintain Valley Water facilities. Minor maintenance is not projected and may occur anywhere in the SMP area. Minor maintenance activities are limited to affecting no more than 0.4 acre or 17,424 square feet of wetland or riparian vegetation annually across the SMP area.

Downed Tree Management

The SMP considers large woody debris (LWD) as downed trees with a diameter of at least 12 inches and a length of at least 6 feet that have fallen below Ordinary High Water Mark (OHWM) in a salmonid creek. When a downed tree that meets the criteria to be LWD occurs along Valley Water channels, staff evaluates the tree for its potential to cause or increase erosion, flooding, reduced channel conveyance capacity, or bank failure or to negatively affect a facility (e.g., bridge or culvert). If erosion, flooding risks, and debris capture are unlikely and if the downed tree will not damage nearby infrastructure, Valley Water seeks to retain the tree in anadromous creeks as a habitat feature along the channel. However, if the downed tree is deemed to pose a potential flood risk or is likely to damage infrastructure, Valley Water may reposition, modify, cut, or remove it to maintain channel conveyance capacity or infrastructure integrity.

1.4.4 General Exclusions

The SMP does not include the following work activities:

1. Emergency repair work[1];
2. Maintenance work that would increase the flow conveyance or water supply capacity of a facility beyond the designed conveyance channel capacity (as-built design);
3. Maintenance work in stream reaches that are above the 1,000-foot elevation contour;
4. Maintenance work for dams, reservoirs, and other water supply facilities, such as canals, pipelines outside of stream corridors, groundwater percolation ponds, and instream summer dams (maintenance of these facilities will have environmental coverage outside of SMP-3);
5. Installation or major modification of fish ladders;
6. Work performed by other agencies;

[1] A situation is considered an “emergency” if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resources Code Section 21060.3).

7. Maintenance work conducted on private property except under urgent conditions to prevent immediate risks that threaten public safety, property, or infrastructure, as explained below in section 1.4.9; and

8. Maintenance associated with Capital Improvement Projects or large construction projects (e.g., projects outside the scope of SMP per-project limits).

1.4.5 Summary of SMP-3 Updates

As described in Chapters 1-9 of this SMP-3 Manual, primary updates to the Program include the following:

- Removal of the "Modified with Ecological Value" channel type designation included in a previous interim version of the SMP-2 Manual. Upon review, this designation was superfluous and created redundancy issues for Valley Water. For the SMP Update, Valley Water has reverted the classification of these channels to the original two types: "Modified" and "Unmodified." Channels classified as "Modified Channel with Ecological Value" in the SMP-2 Manual are now classified as "Modified Channel."

- Addition of hazard tree management for public safety purposes.

- Addition of the removal of trees greater than 12 inches in diameter at breast height (dbh) for purposes of public safety, fire safety, channel conveyance capacity, maintenance site access, and overall ecological health.

- Removal of invasive plant management as a mitigation option. This activity will be considered a vegetation management activity until the County-wide Integrated Invasive Plant Management Program (IIPMP) is implemented.

- Expansion of the "minor maintenance activities" work category to include trash boom maintenance, work at maintenance yards, floodwall maintenance, maintenance of the Palo Alto tide gates, maintenance of passive flood barriers, ongoing maintenance of restoration sites, and maintenance of fish ladders that are not associated with a diversion.

- Expansion of the "management of animal conflicts" work category to include bat inspection and exclusion activities within the Upper Llagas Flood Protection Project's high-flow bypass tunnel.

- Revision of the title of Chapter 9 of the SMP-2 Manual from "Large Woody Debris" to "Downed Tree Management."

- Updates to Program work limits as described throughout Chapters 4 through 9.

- Refinements to BMPs to reflect updated regulations and improve clarity.

- Updates to the Program's mitigation approach are described below in Section 1.4.7.

1.4.6 Work Windows

Seasonal restrictions and work windows provide resource protections for SMP work. In general, the work window for in-channel vegetation removal, herbicide application, sediment removal, and bank stabilization is between June 15 and October 15 each year.

Under certain conditions, and depending on the activity type, Valley Water may extend the maintenance period past October 15. Chapter 3, Section 3.4, Work Windows, provides a more complete description of maintenance work windows and allowable extensions.

1.4.7 Program Mitigation

The SMP has an established, comprehensive mitigation program to address unavoidable impacts to aquatic, wetland, and/or riparian habitats and habitat supporting special-status species. Chapter 3, *Maintenance Planning and Impact Avoidance,* describes the SMP's impact avoidance and minimization approaches. Chapter 10, *Mitigation Program*, provides a detailed description of the Program's mitigation approach.

During SMP-1 (2002–2012), Program mitigation was achieved by several land acquisition and restoration projects that provided permanent mitigation for several projected SMP activities affecting wetlands and waters of the U.S./State. Under SMP-1, permanently mitigated areas (PMAs) were established for select activities, including sediment removal, in-channel (below OHWM) removal of vegetation less than 6 inches dbh, and in-channel (below OHWM) herbicide application. PMAs are sites where these activities are mitigated in perpetuity. PMAs were established for sediment removal and vegetation management activities that were projected in the 2001 SMP and evaluated in the 2002 FEIR. Chapter 10 and Attachment B describe the SMP-1 mitigation projects and where PMAs were established. In addition to land acquisition and restoration, under SMP-2, additional mitigation approaches included on-site and off-site ecological services–based mitigation, species-specific mitigation, and a single-user mitigation bank developed in coordination with the U.S. Army Corps of Engineers (USACE) and other regulatory agencies.

For SMP-3, Valley Water plans to develop new PMAs for projected sediment removal and in-channel vegetation removal activities that would result in impacts to jurisdictional habitats or sensitive species outside of existing PMAs. The target reaches would be non-PMA areas that require frequent routine maintenance. PMA mitigation opportunities would create, establish, and/or provide suitable mitigation to address permanent impacts associated with annual repeated maintenance activities. Opportunities to provide suitable and high-quality mitigation to address the potential impacts to the channel's functions and values could occur through restoring existing Valley Water habitats or restoring or improving other watershed lands, or non-Valley Water maintained creeks, or other natural resources. Mitigation would be provided in perpetuity as it was for PMAs established during SMP-1. Although this approach is similar to the PMA approach in SMP-1, SMP-3 would develop additional PMAs that would target a smaller subset of high priority channels that require repeated annual maintenance and do not currently have PMA status. The SMP-3 mitigation approach is also planning to rely on the VHP, which is currently being amended, and the associated VHP In-Lieu Fee Program. SMP mitigation can be achieved by complying with the VHP's USACE Regional General

Permit and paying in-lieu fees to offset impacts to jurisdictional waters. Agency-specific mitigation requirements are described in the SMP-3 permits. These permits should be consulted for additional information regarding agency -specific requirements pertaining to compensatory mitigation, including mitigation monitoring, success criteria, and reporting.

1.4.8 Ongoing Maintenance of Capital Improvement Projects

Large construction projects and capital improvement projects (CIPs) are generally not considered routine stream maintenance activities and are not included in the SMP. However, if a capital project requires maintenance activities that are consistent with the scope and size limits of the SMP and a waiver is approved by the permitting agencies, such maintenance activities associated with a capital project potentially could be addressed through the SMP. Future CIPs will analyze and account for their construction and long--term operations and maintenance (O&M) impacts under their own environmental review processes. The CIP environmental review analysis can include a discussion of anticipated O&M activities that have already been mitigated under the SMP (where PMAs have been established). These PMAs are specific to the work location and channel cross section, work activity type, work acreage, and scope of work. Permanently mitigated work activities and qualifying areas in future CIPs may be performed under the SMP.

Longer term routine maintenance needs associated with CIPs will be evaluated for their potential coverage by the SMP. Valley Water will identify whether such activities would be covered under existing PMAs or would require additional mitigation. CIPs with maintenance activities not covered by the SMP would need to obtain separate authorizations.

1.4.9 Channel Types and Ownership

Channel Types

Streams within the SMP area are generally classified by two types, as either a Modified Channel or an Unmodified Channel. The location of these channel types within each major watershed is shown in Figures 1-2 through 1-6. Photos showing examples of the channel types are seen in Figures 1-7 through 1-8. These figures are provided at the end of this chapter.

A previous interim version of the SMP-2 Manual included a third channel type referred to as “Modified Channel with Ecological Value.” Upon review, this additional channel designation created redundancy issues and was problematic. For the SMP-3 Manual update, Valley Water has reverted the channel classifications to the original two types, “Modified” and “Unmodified.” Channels classified as “Modified Channel with Ecological Value” in the previous SMP-2 Manual are now classified as “Modified Channel.”

Modified Channel: In general, the Modified Channel type includes channels that have been substantially altered from historical conditions. Some modified channels have been the subject of CIPs, while others were constructed in conjunction with land development projects or to maximize developable land adjacent to a creek. Most Modified Channels have established design flow conveyance criteria and will be maintained to those criteria.

However, many Modified Channels were not built according to an engineered design with established design flow conveyance criteria.

Modified Channels typically include realigned, straightened, improved, or hardened reaches that have been designed to maximize the efficient flow of water to minimize erosion and flooding. These channels generally are grass--lined or concrete--lined (bed or bank) and may include a low--flow channel. Some Modified Channels have the potential for habitat enhancement. Some Modified Channels already provide ecological functions and values, including features such as mature riparian woodland canopy, older native trees, and/or habitat for special-status species.

Unmodified Channel: Unmodified Channels have not been substantially altered by Valley Water or other agencies through human intervention and are generally similar in form and location to their historic conditions. Unmodified Channels may have small areas of modification, including bridges, outfalls, culverts, gauges, or other appurtenant structures. Unmodified Channels are usually located in areas without other types of flood protection measures and generally occur in the foothills or higher elevations of the SMP area. Some Unmodified Channels provide inherent ecological values. Mature riparian woodland canopies and older native trees occur along many Unmodified Channels. Grassy areas, restoration areas, and adjacent woodlands provide habitat for nesting birds and other wildlife.

Channel Ownership

Valley Water generally performs routine maintenance work where it owns property in fee title, has an easement (e.g., for flood protection, water management, or storm drainage purposes), or has maintenance obligations pursuant to effective licenses and agreements. However, Valley Water sometimes needs to conduct urgent flood protection on other public or private property where a public purpose is endangered and where it is safe to do so. Occasionally, work activities not subject to SMP mitigation requirements may also occur on other public or private property generally for stream stewardship purposes. Because of the skill and knowledge necessary to maintain creek system function, Valley Water is occasionally requested to work on other private property for such purposes. As with the previous program iterations, Valley Water anticipates that some stream maintenance activities are likely to occur under SMP-3 at sites where no fee title or easement property rights exist. In these cases, Valley Water may acquire new property rights through acquisition of fee title or easements to meet SMP goals and objectives, provide creek access, and prevent encroachment of development into floodplains.

1.4.10 Work on Valley Water–owned and Non-Valley Water–owned Property

Valley Water owns approximately one-third of the land within and along Santa Clara County creeks. Under the SMP, Valley Water performs maintenance and property management activities on completed flood protection projects and on other lands where Valley Water has ownership or easements, or where required by effective permits or agreements. These property management activities, commonly referenced as maintenance, may be performed for public safety, water quality, erosion repair, fire code compliance, and ecological health and stewardship purposes.

While other public agencies are also owners of channels and creeks, there are also thousands of private property owners whose lands include streams and channels in the county. Property owners have a duty to maintain their property in a reasonably safe condition and in a manner that does not interfere with neighbors' ability to enjoy their property. Many activities proposed below the top of bank and within the riparian corridor are subject to review and permitting by local, state, and federal regulatory agencies prior to performing the work.

It is important to Valley Water that property owners act as good stewards of creek areas within and adjacent to their properties. Valley Water has conducted informational outreach and created several fact sheets with information to help property owners care for these areas. Valley Water periodically assesses types of assistance and potential partnerships that could be provided for flood protection purposes to non-Valley Water property owners.

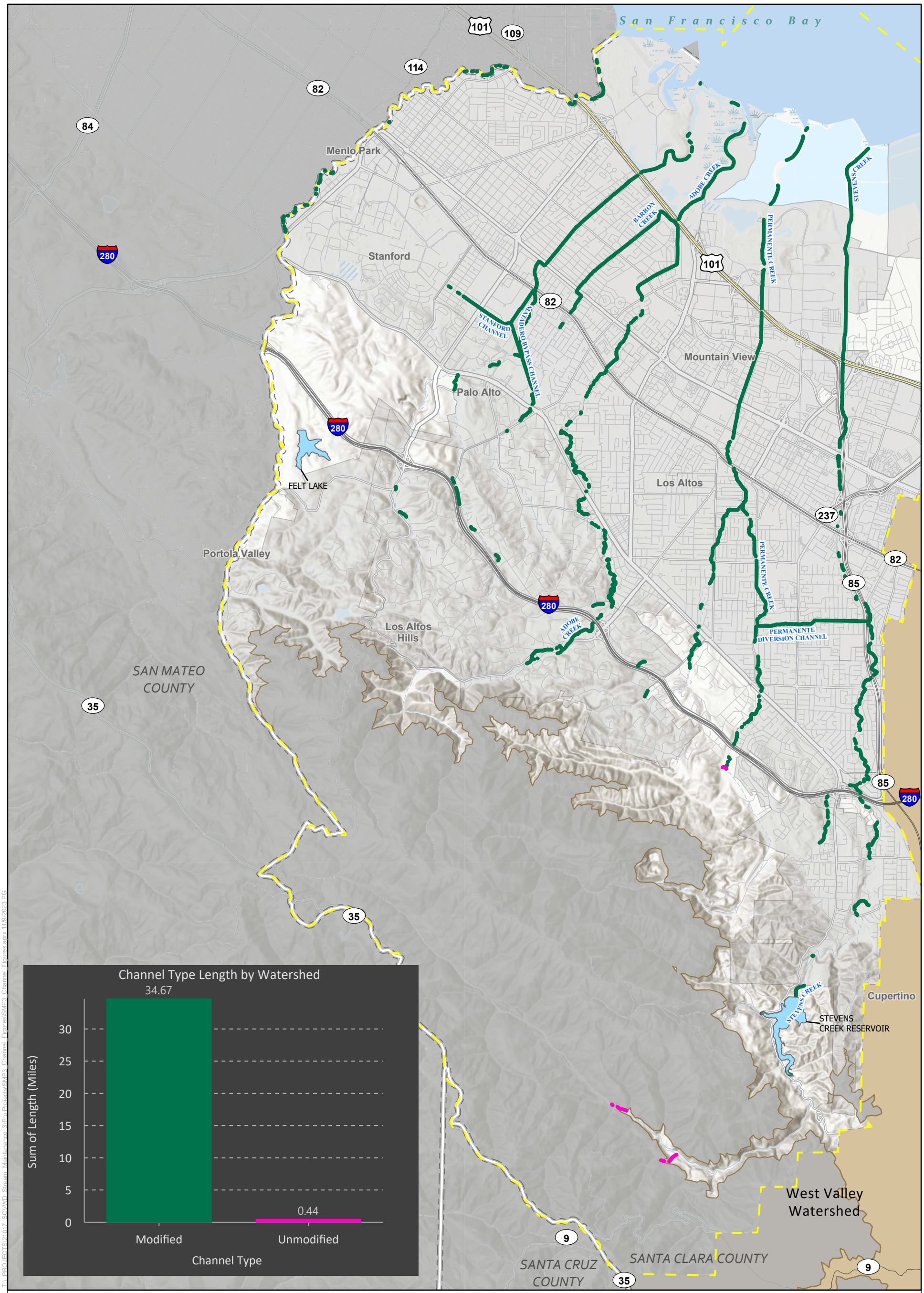

Figure 1-2
Lower Peninsula Watershed
Channel Types

MONTROSE ENVIRONMENTAL

Note: The channels displayed are only those within Valley Water's fee and easement jurisdiction.

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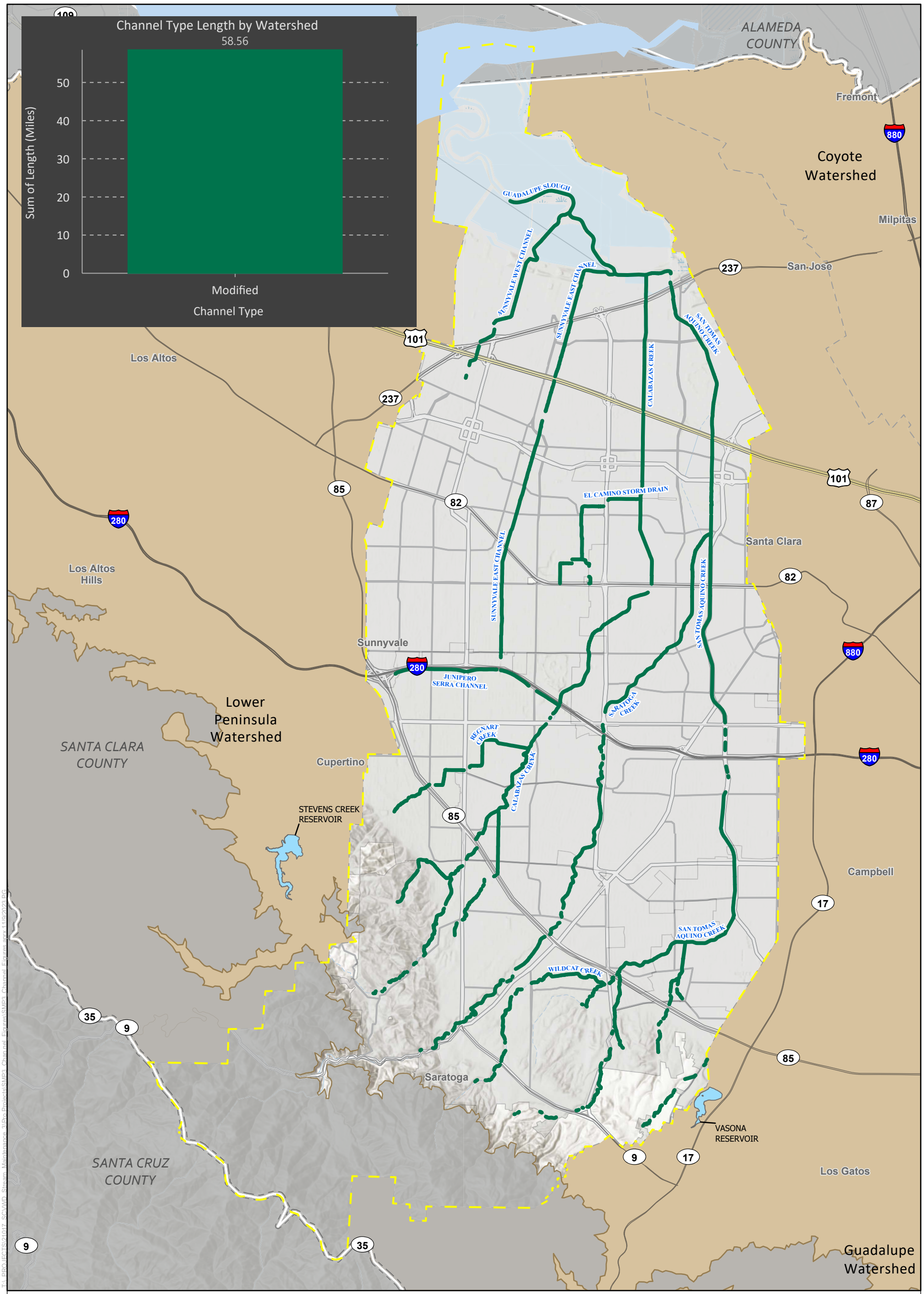

Figure 1-3
West Valley Watershed
Channel Types

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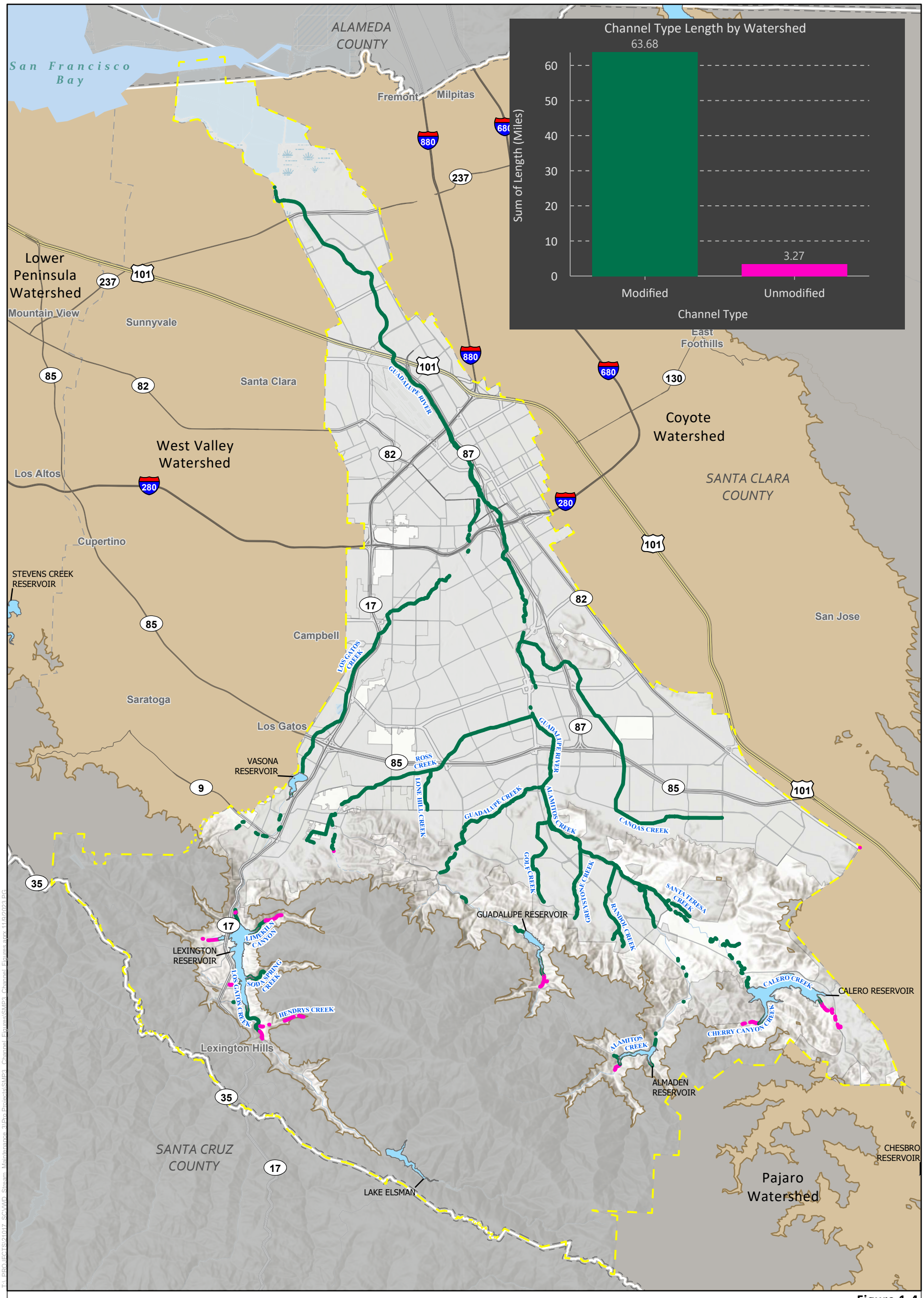

Figure 1-4
Guadalupe Watershed
Channel Types

MONTROSE ENVIRONMENTAL

Note: The channels displayed are only those within Valley Water's fee and easement jurisdiction.

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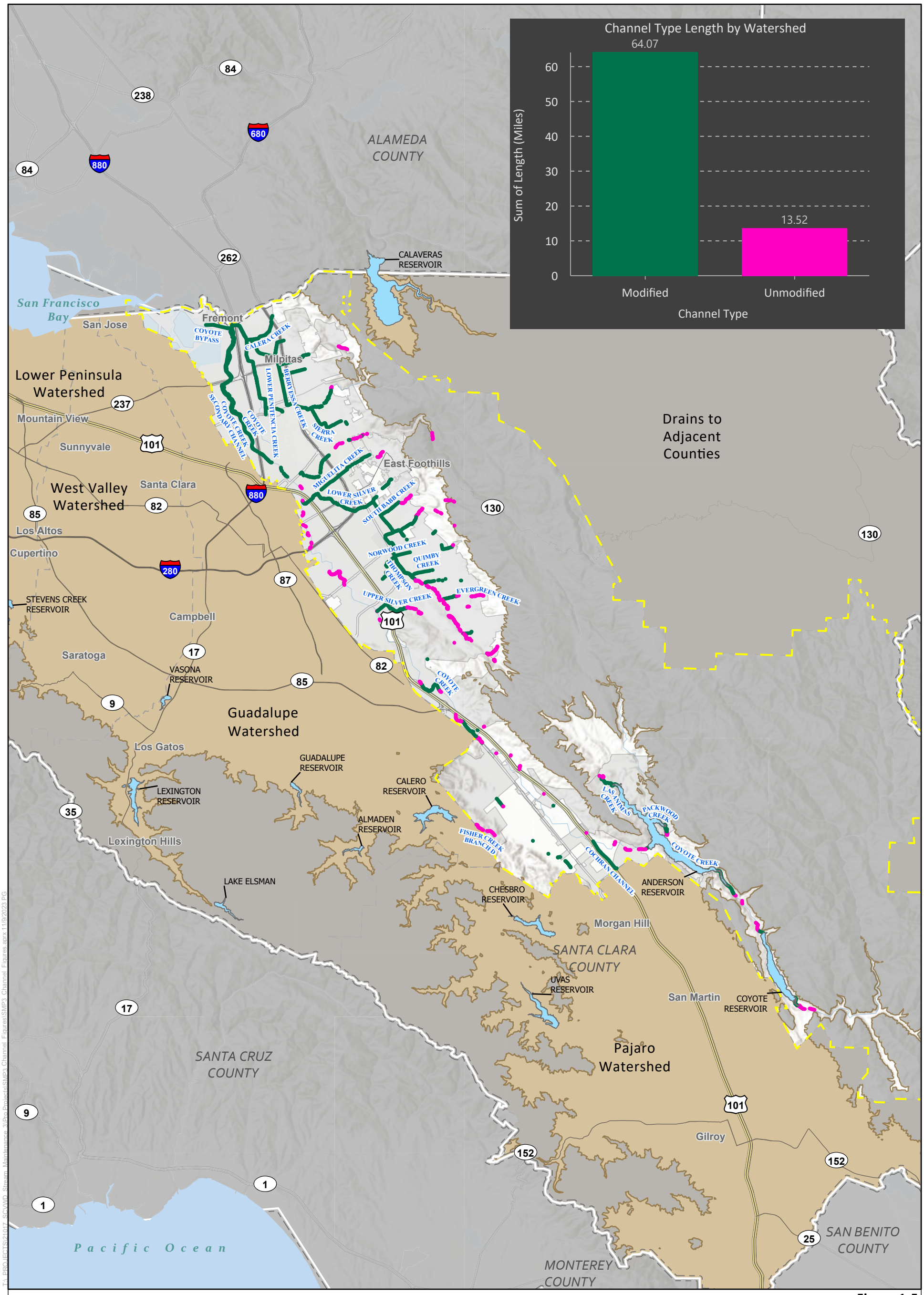

Figure 1-5
Coyote Watershed
Channel Types

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MONTROSE ENVIRONMENTAL

Note: The channels displayed are only those within Valley Water's fee and easement jurisdiction.

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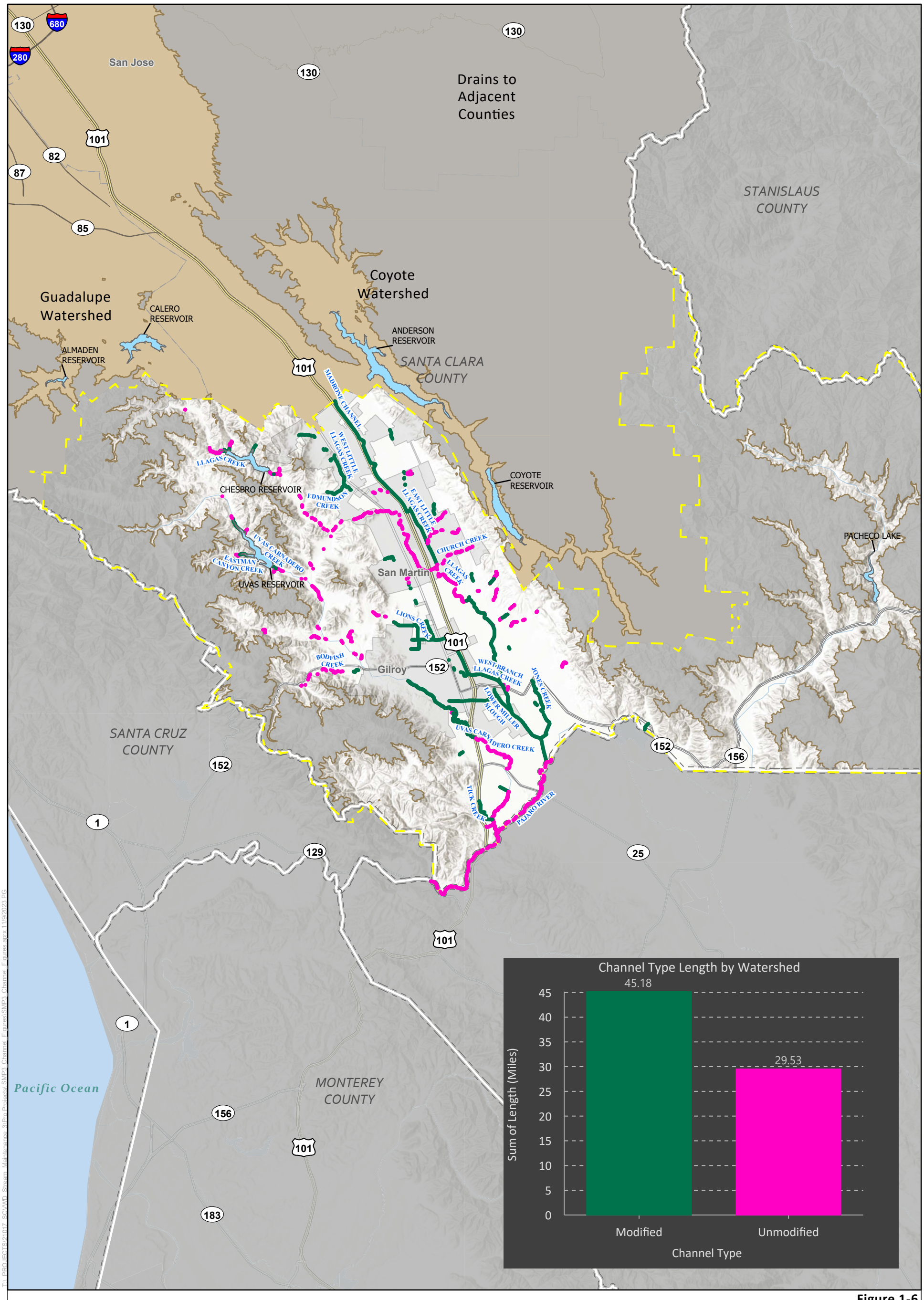

Figure 1-6
Pajaro Watershed
Channel Types

Note: The channels displayed are only those within Valley Water's fee and easement jurisdiction.

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Photo 1. Adobe Creek at Station 219+16.



Photo 2. Lions Creek at Station 10+50.



Photo 3. Matadero Creek at Station 121+08.



Photo 4. Ross Creek at Station 205+46.



Photo 5. San Tomas Aquino Creek at Station 174+17.



Photo 6. Sunnyvale East Channel at Station 156+28.

Figure 1-7a
Representative Modified Channels



Photo 1. Adobe Creek at Station 257+05.



Photo 2. Coyote Creek at Station 1525+50.



Photo 3. Guadalupe River at Station 708+00.



Photo 4. San Francisquito Creek at Station 31+02.



Photo 5. Smith Creek at Station 71+25.



Photo 6. Uvas Creek at Station 461+40.

Project 10.005_July2013

Figure 1-7b
Representative Modified Channels



Photo 1. San Tomas Aquino Creek at Station 820+00.



Photo 2. San Tomas Aquino Creek at Station 823+00.



Photo 3. Stevens Creek at Station 931+46.



Photo 4. Stevens Creek at Station 943+62.



Photo 5. Uvas Creek at Station 327+00.



Photo 6. Llagas Creek at Station 521+75.

Figure 1-8
Representative Unmodified Channels

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CHAPTER 2. ENVIRONMENTAL AGENCIES AND REGULATORY FRAMEWORK

2.1 PURPOSE

This chapter describes the relevant regulations and permit processes that Valley Water uses to obtain SMP authorization from various federal, state, and regional environmental agencies. The subsections below address each agency, its regulatory authority, and its permitting processes as they relate to the SMP.

2.2 U.S. ARMY CORPS OF ENGINEERS

2.2.1 Clean Water Act Section 404

Section 404 of the Clean Water Act (CWA) prohibits the discharge of dredged and fill materials into waters of the United States (U.S.), including wetlands, without prior U.S. Army Corps of Engineers (USACE) authorization. “Discharge of dredged material” and “discharge of fill material” are defined in Title 33, Section 323.2 of the Code of Federal Regulations (33 CFR Section 323.2). “Waters of the United States,” including “wetlands,” are defined in 33 CFR Section 328.3. USACE jurisdiction in wetlands and other waters of the U.S. is briefly summarized below. A May 25, 2023 U.S. Supreme Court decision in Sackett v. Environmental Protection Agency limited the definition of jurisdictional wetlands that are considered waters of the U.S. to those wetlands having a continuous surface connection with traditional navigable waters.

Wetlands

USACE regulates adjacent wetlands, defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland boundaries are delineated following the methodologies outlined in USACE’s 1987 Wetland Delineation Manual and its 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. Wetlands established solely due to the presence of irrigation water, irrigated fields, or irrigation ditches do not qualify as Section 404 wetlands; however, if it is difficult to determine whether the wetland existed at the location prior to the presence of irrigation activities, they may still be considered waters of the U.S. (USACE 2008). USACE jurisdiction over wetlands will be defined by current regulations and guidance on waters of the U.S.

In the Program area, wetlands (including both tidal and non-tidal wetlands) are present in many areas where SMP activities may occur.

Non-Wetland (“Other”) Waters of the United States

Non-wetland waters of the U.S. include intrastate lakes, rivers, impoundments, tributaries, and territorial seas. In non-tidal waters without wetlands present, USACE jurisdiction generally extends to the ordinary high water mark (OHWM); when adjacent wetlands are present, the jurisdiction generally extends beyond the OHWM to the boundary of those wetlands. In tidal waters without wetlands present, USACE’s limits of

jurisdiction generally extends landward to the high tide line (HTL); when adjacent wetlands are present, the jurisdiction generally extends beyond the HTL to the boundary of those wetlands. In the Program area, non-tidal, non--wetland waters include rivers, creeks, some ditches, ponds, and lakes; tidal non--wetland waters include tidal portions of creeks as well as sloughs and tidal ponds. These waters are categorized as “other” waters by the USACE. USACE jurisdiction over other waters will be defined by current regulations and guidance on waters of the U.S.

Non-Regulable Discharges of Dredge Material

While no regulatory definition of incidental fallback currently exists, in general, it is defined as the redeposit of small volumes of dredged material that is incidental to excavation activity in waters of the U.S. when such material falls back to substantially the same place as the initial removal. For instance, when using a clamshell dredge, some small portion of the sediment collected by the clamshell falls out of the clamshell and becomes deposited within waters of the U.S. As described in 33 CFR Section 323.4, incidental fallback is not considered a regulated discharge of dredge material under the CWA.

As a result, the incidental fallback associated with excavating sediment from the channel using long-reach excavators or other similar equipment located from a top-of-bank location or within the channel is not regulated by USACE under CWA Section 404. This assumes that the removed sediment is not stockpiled in the channel or within waters of the U.S. and is loaded immediately onto a truck or other storage or hauling system. In contrast, projects that involve stockpiling of excavated sediments within waters of the U.S., or use of equipment that moves dredged material from one place to another within waters of the U.S. prior to removal of the dredged material (for instance, a bulldozer moving sediment along a channel bed), are subject to regulation under CWA Section 404. Dewatering activities and temporary access road construction activities associated with sediment removal also require authorization.

As described in 33 CFR Section 323.4, other discharges that are not subject to CWA Section 404 include normal farming, silviculture and ranching activities (e.g., plowing, seeding, minor drainage, and harvesting) for the purposes of food production, forest products, or upland soil, and water conservation practices. In addition, emergency reconstruction of currently serviceable structures including dikes, dams, levees, groins, riprap, bridge abutments, and other transportation structures may be exempt from regulation under CWA Section 404. To qualify for an emergency reconstruction exemption, construction must occur within a reasonable period of time after the damage occurs and must not include any modification that changes the character, scope, or size of the original structure.

2.2.2 Rivers and Harbors Act Section 10

Section 10 of the federal Rivers and Harbors Act of 1899 prohibits obstruction or alteration of navigable waters of the U.S. without prior USACE authorization. Within the Program area, Section 10 jurisdictional waters include all tidally influenced portions (up to the mean high water line) of Guadalupe, Coyote and Alviso sloughs and the lower reaches of Permanente, Stevens, San Tomas Aquino, Calabazas, San Francisquito, Coyote and Lower Penitencia creeks, Sunnyvale East and West channels, and the Guadalupe River.

2.2.3 Regional General Permit

USACE issued a Regional General Permit (RGP) for the SMP (File No. SPN-1996-225250S), under the authority of CWA Section 404 (33 U.S. Code [USC] Section 1344) and the Rivers and Harbors Act of 1899 Section 10 (33 USC Section 403) in 2014. The existing RGP was valid for 5 years from the date of issuance and was then renewed for another five years through 2023. The current permit was extended by the USACE to December 31, 2026.

The USACE may either issue an amended RGP or a new RGP for SMP-3. Compliance with additional regulations, including but not limited to the following acts and policies, will be required by USACE before issuing a new or amended RGP:

- Federal Endangered Species Act
- Fish and Wildlife Coordination Act
- Migratory Bird Treaty Act
- Bald and Golden Eagle Protection Act
- Magnuson–Stevens Fishery Conservation and Management Act for Essential Fish Habitat
- Section 106 of the National Historic Preservation Act
- Section 401 of the Clean Water Act
- National Environmental Policy Act

As part of the SMP-2 permitting process, Federal Endangered Species Act (FESA) compliance was achieved through Section 7 consultations requested by USACE with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) (as described in Section 2.2.5, Federal Endangered Species Act – Section 7 Consultation). Fish and Wildlife Coordination Act (FWCA) compliance was achieved through a FWCA report prepared by USFWS. Magnuson–Stevens Fishery Conservation and Management Act (MSA) compliance was achieved through an Essential Fish Habitat (EFH) consultation requested by USACE. National Historic Preservation Act (NHPA) compliance was achieved through adherence to BMPs GEN-47 through GEN-50 (as described in Section 2.2.4, National Historic Preservation Act Section 106). CWA Section 401 compliance occurred through issuance of programmatic 401 Water Quality

Certifications from the San Francisco Bay and Central Coast Regional Water Quality Control Boards (RWQCBs) (as described in Section 2.6.2, Clean Water Act Section 401). National Environmental Policy Act (NEPA) compliance was achieved by USACE's preparation of an Environmental Assessment (EA) as part of the RGP process. A Finding of No Significant Impact (FONSI) was prepared for the EA.

2008 Mitigation Rule

In 2008, the U.S. Environmental Protection Agency (USEPA) and USACE issued regulations governing compensatory mitigation for activities authorized by USACE permits, commonly referred to as the 2008 Mitigation Rule (40 CFR Part 230, 33 CFR Parts 325 and 332). The 2008 Mitigation Rule adopted standards to improve the planning, implementation, and management of compensatory mitigation projects through several means, including:

- establishing a mitigation hierarchy;
- using a watershed approach in selecting locations for mitigation projects;
- requiring measurable ecological performance standards and regulator monitoring;
- stipulating timing requirements for mitigation project implementation; and
- specifying the components of a complete compensatory mitigation plan (including identifying responsible parties and assurances that the mitigation is implemented as planned).

Valley Water will provide compensatory mitigation for impacts to waters of the U.S. in accordance with the 2008 Mitigation Rule, as described in Section 2.11, Applicable Regulatory Guidance for SMP-3 Mitigation Program. USACE-specific mitigation requirements will be described in the RGP special conditions. The RGP should be consulted for additional information regarding USACE-specific requirements pertaining to compensatory mitigation, including mitigation monitoring, success criteria, and reporting.

2.2.4 National Historic Preservation Act Section 106

Section 106 of the NHPA, as amended, requires federal agencies to consider their projects' effects on cultural resources, including historic properties and historic and prehistoric archaeological sites. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Record of Historic Places (NRHP) and establish an Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the NHPA requires federal agencies to afford the ACHP a reasonable opportunity to comment on an undertaking before licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the NRHP, and it requires federal agencies to coordinate with the State Historic Preservation Officer (SHPO).

All earth-disturbing activities, such as bank stabilization and sediment removal activities that are conducted under the SMP within USACE jurisdiction, will require compliance

with Section 106 of the NHPA, achieved through USACE Section 106 consultation with the SHPO for the RGP. When issuing a new RGP or RGP amendment to Valley Water for SMP-3, USACE will ensure that Valley Water meets its compliance requirements by conditioning the RGP to require the implementation of the relevant cultural resource avoidance measures and BMPs listed in Attachment A, *Stream Maintenance Program Best Management Practices*. BMPs GEN-47 Minimize Impacts to Inadvertently Discovered Cultural Resources, GEN-49 Discovery of Human Remains, and GEN-50 Review of Projects with Native Soil include several measures to avoid and minimize potential impacts to cultural resources by requiring implementation of a protocol for notification and response actions if cultural resources are encountered.

2.2.5 Federal Endangered Species Act – Section 7 Consultation

FESA was enacted in 1973 to protect plant and wildlife species that have been determined by USFWS or NMFS to be at risk of extinction. Species are protected through listing under the FESA as either threatened or endangered. An endangered species is at risk of extinction throughout all or a significant portion of its range (FESA Section 3[6]). A threatened species is likely to become endangered within the foreseeable future (FESA Section 3[19]).

FESA Section 9 prohibits the take of any fish or wildlife species listed under the FESA as endangered. Take of threatened species is also prohibited under FESA Section 9 unless otherwise authorized by federal regulations. “Take,” as defined by the FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harm” is defined as “any act that kills or injures the species, including significant habitat modification.” In addition, FESA Section 9 prohibits the “removal or reduction to possession” of any listed plant species “under federal jurisdiction” (i.e., on federal land).

The FESA includes three mechanisms that provide exceptions to the FESA Section 9 take prohibitions: FESA Section 7 consultation, incidental take approval through FESA Section 10, and issuing FESA Section 4(d) rules. FESA Section 7 consultation is most relevant to SMP activities because it provides a means for authorizing take coverage of threatened and endangered species under certain circumstances, including federal actions. Section 7 is the mechanism by which incidental take coverage may be obtained to conduct SMP activities.

Under FESA Section 7, for any maintenance projects within USACE jurisdiction, USACE will consult with USFWS and NMFS to ensure that the proposed federal action (which in the case of the SMP is USACE’s issuance of an RGP or RGP amendment) will not jeopardize the continued existence of endangered or threatened species or result in adverse modification of designated critical habitat. Because the SMP may affect listed species and designated critical habitat, Valley Water will prepare Biological Assessments (BAs) for distribution to USFWS and NMFS by USACE that evaluate the nature and magnitude of the expected effects. It is anticipated that USFWS and NMFS will each issue a Biological Opinion (BO).

For USFWS-regulated species, incidental take approval for SMP activities could also be provided via FESA Section 10 through the Santa Clara VHP. SMP activities were expressly excluded from the list of VHP-covered activities when the VHP was initially prepared and adopted in 2012. However, the Santa Clara Valley Habitat Agency is in the

process of initiating the first amendment to the VHP, and while the aspects of the VHP to be amended have not yet been fully defined, it is possible that the VHP could be amended to provide coverage of some (or even all) SMP activities. In that case, the SMP could obtain incidental take coverage through the VHP, for those species covered by the amended VHP. The Section 7 consultations described above between the USACE and the USFWS/NMFS would still occur, although the BA and BO related to USFWS-regulated species could be abbreviated with respect to effects of VHP-covered SMP activities on VHP-covered, listed species. Where take of state- or federally-listed species would occur for listed species that are not covered under the VHP, endangered species consultations will continue to occur on an as-needed basis.

2.3 U.S. FISH AND WILDLIFE SERVICE

2.3.1 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC Section 703), administered by USFWS, implements four treaties between the U.S. and Canada, Mexico, Japan, and Russia to manage and conserve migratory birds that cross international borders. The MBTA prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests and prohibits the possession of all nests of protected bird species whether they are active[1] or inactive. Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction. “Take” includes most actions, direct and indirect, that can result in take or possession, whether it is temporary or permanent, of any protected species. Although harassment and habitat modification are not identified as take under the MBTA or the California Fish and Game Code (F&G Code); actions that result in the direct loss of birds, nests, or eggs, including nest abandonment or failure, are considered take under the regulations.

A list of migratory birds protected under the MBTA is available in 50 CFR Section 10.13. On December 8, 2004, the U.S. Congress passed the Migratory Bird Treaty Reform Act, which excludes all migratory birds that are non-native or have been introduced to the U.S. or its territories. The reform act defines a native migratory bird as a species present within the U.S. and its territories as a result of natural biological or ecological processes. USFWS published a list of the bird species excluded from the MBTA on March 15, 2005 (70 Federal Register 12710). The list of migratory birds covered by the MBTA was updated in 2020, effective May 18, 2020 (50 CFR Section 10.13).

Most native bird species occurring in the Program area are protected by the MBTA. SMP activities, such as vegetation management, may require the removal of vegetation at work sites where migratory birds are nesting. To comply with the MBTA, Valley Water will implement BMPs that require pre-activity surveys before beginning maintenance activities during breeding season to avoid take of migratory birds.

[1] An active nest is defined as having eggs or young, as described in the USFWS' June 14, 2018 memorandum “Destruction and Relocation of Migratory Bird Nest Contents.”

2.3.2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 USC Section 668 et seq.) protects eagles from commercial exploitation and safeguards their continued survival in the U.S. This law provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) (the national emblem) and the golden eagle (*Aquila chrysaetos*) by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds, or their parts, products, nests, or eggs. USFWS, which enforces the BGEPA, can issue permits for the take of eagles under limited circumstances (e.g., for scientific and exhibition use or for traditional and cultural use by Native Americans). However, no such permit will be needed for SMP activities, which will avoid any impacts through implementation of BMPs involving pre-construction surveys for nesting birds, including eagles, and implementation of measures to protect any nesting eagles from disturbance.

2.3.3 Federal Endangered Species Act

As described in Section 2.2.5, Federal Endangered Species Act – Section 7 Consultation, the FESA protects plant and wildlife species determined by USFWS or NMFS to be at risk of extinction. USFWS is responsible for protection of listed plants and wildlife other than marine species and anadromous fishes, which are protected by NMFS. Attachment C, *Special-status Plants and Special-status Fish and Wildlife,* summarizes listed species that may occur in the Program area and critical habitat as designated by USFWS.

Listed Species

The following federally listed threatened, endangered, proposed, and candidate species that are protected by USFWS (or that could be protected during the SMP-3 duration) have been determined to occur or potentially occur in the Program area:

- Coyote ceanothus (*Ceanothus ferrisiae*), listed as Endangered
- Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*), listed as Endangered
- Santa Clara Valley dudleya (*Dudleya setchellii*), listed as Endangered
- Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*), listed as Endangered
- California seablite (*Suaeda californica*), listed as Endangered
- Bay checkerspot butterfly (*Euphydryas editha bayensis*), listed as Threatened
- Monarch butterfly (*Danaus plexippus*), candidate for listing
- Large marble butterfly (Euchloe ausonides ausonides), proposed for listing as Endangered
- California red-legged frog (*Rana draytonii*), listed as Threatened

- Foothill yellow-legged frog (*Rana boylii*), Central Coast population, listed as Threatened
- California tiger salamander (*Ambystoma californiense*), Central distinct population segment (DPS), listed as Threatened
- Northwestern pond turtle (Actinemys marmorata), proposed for listing as Threatened
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia),* listed as Endangered
- California Ridgway's rail (*Rallus obsoletus obsoletus*), listed as Endangered
- California condor (*Gymnogyps californianus*), listed as Endangered
- California least tern (*Sternula antillarum browni*), listed as Endangered
- Least Bell's vireo (*Vireo bellii pusillus*), listed as Endangered
- Western snowy plover (*Charadrius nivosus nivosus*), listed as Threatened
- Salt marsh harvest mouse (*Reithrodontomys raviventris*), listed as Endangered
- San Joaquin kit fox (*Vulpes macrotis mutica*), listed as Endangered
- San Francisco Bay-Delta longfin smelt (*Spirinchus thaleichthys*), listed as Endangered
- Central California Coast steelhead (Oncorhynchus mykiss), listed as Threatened
- South-Central California Coast steelhead (Oncorhynchus mykiss), listed as Threatened
- Southern green sturgeon (Acipenser medirostris), listed as Threatened

These species are described in greater detail in Attachment C.

Critical Habitat

Designated critical habitat for the Bay checkerspot butterfly, California red-legged frog, and California tiger salamander is present within the Program area.

As described in Section 2.2.5, USACE will consult with USFWS concerning potential effects of SMP activities on the listed species and designated critical habitat; Valley Water will prepare a BA describing these effects to facilitate the consultation. A BO will likely be obtained for the SMP, which will evaluate potential impacts on threatened and endangered wildlife species and their critical habitat. As mentioned in Section 2.2.5, it is also possible that incidental take approval for SMP activities could be provided for USFWS-regulated species, via Section 10 through the VHP for VHP-covered species, if the upcoming VHP amendment includes coverage of SMP activities.

2.4 NATIONAL MARINE FISHERIES SERVICE

2.4.1 Federal Endangered Species Act

As described in Section 2.2.5, Federal Endangered Species Act – Section 7 Consultation, the FESA protects plant and wildlife species determined by USFWS or NMFS to be at risk of extinction. NMFS is responsible for protection of federally listed marine species and anadromous fishes.

Listed Species

The following federally listed threatened, endangered, proposed, and candidate species that are protected by NMFS have been determined to occur or potentially occur in the Program area:

- Steelhead (*Oncorhynchus mykiss*), Central California Coast Distinct Population Segment (DPS) (CCC steelhead), listed as Threatened (79 FRN 20802), most recent status review April 13, 2016.
- Steelhead, South-Central California Coast DPS (S-CCC steelhead), listed as Threatened (79 FR 20802), most recent status review May 2, 2023.
- Southern DPS of North American green sturgeon (*Acipenser medirostris*), listed as Threatened (74 FR 52300), most recent status review November 1, 2021.

These species are described in greater detail in Attachment C.

Critical Habitat

Critical habitat occurs in the Program area for CCC steelhead (79 FR 20802), S-CCC steelhead (79 FR 20802), and southern DPS green sturgeon (74 FR 52300).

As described in Section 2.2.5, USACE may need to consult with NMFS concerning potential effects of SMP activities on the protected anadromous fish species and habitat. The federal consultation process between USACE and NMFS is similar to the process described above for USFWS, whereby NMFS evaluates potential effects on threatened and endangered anadromous fish species and their critical habitat through preparation of a BO for the SMP.

2.4.2 Marine Mammal Protection Act

The Marine Mammal Protection Act prohibits the take of marine mammals, with certain exceptions, in waters under the jurisdiction of the U.S. or by citizens of the U.S. on the high seas, as well as the importation of marine mammals and marine mammal products into the U.S. Take is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.” Harassment is defined as “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”

2.4.3 The Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) establishes a national program to manage and conserve commercial fisheries of the U.S. through the development of federal Fishery Management Plans (FMPs), and the federal regulation of domestic fisheries under those FMPs, within the 200-mile U.S. Exclusive Economic Zone (16 USC Section 1801 et seq.). Essential Fish Habitat (EFH) is designated for commercially fished species under the MSA. Congress defined EFH for federally managed fish species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The MSA requires federal FMPs developed by NMFS and the Pacific Fisheries Management Council to describe the habitat essential to the fish being managed and to describe threats to that habitat from both fishing and non-fishing activities. Pursuant to Section 305(b) of the MSA (16 USC 1855[b]), federal agencies are required to consult with NMFS on actions that may adversely affect EFH for species managed under the FMPs. When NMFS concludes that an action may adversely affect EFH, NMFS is required to provide the action agency with conservation recommendations to protect EFH.

The Program area includes habitats that have been designated as EFH for Pacific salmon, which includes Chinook salmon (*Oncorhynchus tshawytscha*), including tidal and non-tidal waters where maintenance activities could occur. The only fish species subject to an FMP that occurs in non-tidal waters of the Program area with any regularity is Chinook salmon, which is regulated by the Pacific Fisheries Management Council's Salmon FMP. Both Coyote Creek and the San Francisco Bay are officially listed as EFH for this species (Pacific Fisheries Management Council 2024). Chinook salmon also occur in the Guadalupe River watershed. Within the Guadalupe River watershed, Chinook salmon spawning has been observed in Los Gatos Creek, Alamitos Creek, and the mainstem Guadalupe River. NMFS considers any habitat used by Chinook salmon in the South Bay (i.e., tidal waters and non-tidal waters in the Coyote Creek and Guadalupe River watersheds that are accessible to Chinook salmon) as EFH.

EFH for Coastal Pelagic Species and Pacific Groundfish, which includes species such as the leopard shark (*Triakis semifasciata*), English sole (*Parophrys vetulus*), starry flounder (*Platichthys stellatus*), and big skate (*Raja binoculata*), was also identified as having potential to occur in the Program area. The EFH for these species occurs in the tidal habitats of the South San Francisco Bay, and these species occasionally disperse upstream into the reaches of Alviso Slough, Coyote Slough, San Francisquito Creek, San Tomas Aquino Creek, and other tidal creeks in the Program area. Species such as the northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), and jack mackerel (*Trachurus symmetricus*) also occur in the South Bay; these species are less likely to occur in the uppermost tidal reaches of sloughs where SMP activities will take place, but small numbers potentially can occur there. Thus, NMFS considers these tidal waters to be EFH for these FMPs as well.

Under the MSA, USACE will consult with NMFS regarding the effects of the proposed federal action (which, in the case of the SMP, is USACE's issuance of the RGP or RGP amendment) on the EFH of these FMP-managed species. NMFS will then provide recommendations for conservation of EFH during SMP activities.

2.5 U.S. ENVIRONMENTAL PROTECTION AGENCY

USEPA is the overall administering agency for the CWA, and jointly administers CWA Section 404 together with USACE. Under a Memorandum of Agreement (MOA) between USEPA and the Department of Defense, USACE was given sole responsibility for making final permit decisions pursuant to Section 404 and "conducts jurisdictional delineations associated with the day-to-day administration of the Section 404 program" (59 Federal Register 94-1311). USEPA retains the authority to enforce compliance with Section 404 and maintains the power to overrule USACE decisions on the issuance or denial of permits (USEPA 2022). If a dispute occurs about whether an area can be regulated, USEPA has the ultimate authority to determine the actual geographic scope of waters of the U.S. subject to jurisdiction under all sections of the CWA, including the Section 404 regulatory program (U.S. Environmental Protection Agency [USEPA] 2025).

USEPA will not be issuing permits for the SMP, but it will have a coordination and oversight role with the applicable federal agencies and will also provide Valley Water with guidance on implementing the SMP.

2.6 REGIONAL WATER QUALITY CONTROL BOARDS

2.6.1 Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) was enacted in 1969 and, together with the federal CWA, provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established the State Water Resources Control Board (SWRCB) and divided California into nine regions, each overseen by a Regional Water Quality Control Board (RWQCB). The Porter-Cologne Act established regulatory authority over "waters of the State," which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State" (California Water Code, Division 7, Section 13050). More specifically, the SWRCB and its nine RWQCBs have jurisdiction over the bed and banks of a stream channel, its riparian corridor, and its beneficial uses.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2025). In these new guidelines, riparian habitats are not specifically described as waters of the State, but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may require RWQCB permit authorization if affected, and that may be included in required mitigation packages for permits to compensate for impacts to waters of the State.

The Porter-Cologne Act also assigns responsibility for implementing CWA Sections 303, 401, and 402 to the SWRCB and RWQCBs. Under Section 303, the RWQCBs, in conjunction with USEPA, are responsible for developing and implementing Total Maximum Daily Loads (TMDLs) to address water quality impairments.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) for the protection of water quality in each of California's nine regions. A basin plan is unique to each region and must identify beneficial uses, establish water quality objectives for the reasonable protection of the beneficial uses,

and establish a program of implementation for achieving the water quality objectives. To remain current, basin plans must be updated every 3 years and must comply with Section 303 of the CWA, which requires states to establish their own water quality standards. Basin plans provide the technical basis for the RWQCBs to determine waste discharge requirements (WDRs), take enforcement actions, and evaluate grant proposals.

As described below in Section 2.6.2, Clean Water Act Section 401, regulatory compliance for projects occurring within waters of the U.S. is met through Water Quality Certification, granted by the RWQCBs. For projects occurring within Porter-Cologne Act jurisdiction (i.e., state jurisdiction) but outside waters of the U.S. (in streams, this is the area above the OHWM, or "isolated" waters such as wetlands), WDRs or Waiver of WDRs are required. WDRs are issued by the RWQCB that has jurisdiction over the region in which the project will occur. The Keene-Nejedly California Wetlands Preservation Act (AB 2875) enacted in 2024, a makes it state policy to ensure no net loss and long-term gain in the quantity, quality, and permanence of wetlands (i.e., waters of the state protected under the Porter-Cologne Act) acreage and values in California.

The San Francisco Bay and Central Coast RWQCBs (Regions 2 and 3, respectively) have jurisdictional authority to implement the Porter-Cologne Act in Santa Clara County; the San Francisco Bay RWQCB oversees watersheds draining to the San Francisco Bay, and the Central Coast RWQCB oversees watersheds draining to the Pajaro River and then to Monterey Bay. All waters of the U.S. in the Program area also are waters of the State and thus are subject to RWQCB jurisdiction under the Porter-Cologne Act. SMP compliance with the Porter-Cologne Act will occur via WDRs and will be combined with CWA Section 401 Water Quality Certification, as described in Section 2.6.2.

2.6.2 Clean Water Act Section 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of dredged and fill materials into surface waters of the U.S. (including wetlands) must obtain Section 401 Water Quality Certification so that any such discharge will comply with the applicable provisions of the CWA, including Sections 301, 302, 303, 306, and 307, as well as state water quality standards. Section 401 Water Quality Certification is issued by the state in which the discharge will originate; or, if appropriate, by the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge will originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit) also must comply with CWA Section 401. The goal of CWA Section 401 is to include evaluation of water quality when considering activities associated with dredging or placement of fill materials into waters of the U.S.

Valley Water has worked with representatives from the San Francisco Bay and Central Coast RWQCBs to develop a compliance approach for CWA Section 401, and will apply for Section 401 Water Quality Certification for SMP activities affecting waters of the U.S. within the jurisdiction of each of these RWQCBs.

2.6.4 Municipal Regional Stormwater NPDES Permit

As part of the USEPA's National Pollutant Discharge Elimination System (NPDES), municipalities are required to maintain NPDES permits for their stormwater discharges. The municipalities, in turn, require that individual projects within their jurisdiction comply with the requirements of these permits. The Municipal Regional Stormwater NPDES Permit (MRP) (Order R2-2009-0074, NPDES Permit No. CAS612008) covers municipal stormwater discharges from most Bay Area counties and cities. The permit applies to Santa Clara County and to the following cities and agencies within the county that have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program: the cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale; the towns of Los Altos Hills and Los Gatos; and Valley Water. The SMP will continue to comply with the requirements detailed in this NPDES permit, including water quality monitoring and pesticide toxicity control. As described further in Chapter 4, *Vegetation Management,* Valley Water's pesticide use is reviewed by regulators as part of the compliance effort with the MRP.

2.6.5 General NPDES Aquatic Pesticide Use Permit

The SWRCB adopted the Statewide General NPDES Permit for the Regulation of Residual Aquatic Pesticide Discharges to Waters of the U.S. from Algae and Aquatic Weed Control Applications (Water Quality Order 2013-002-DWQ, General Permit No. CAG990005). This general NPDES permit limits the authorized discharge of aquatic pesticides to only the following: 2,4-D, acrolein, calcium hypochlorite, copper, diquat, endothall, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, sodium carbonate peroxyhydrate, sodium hypochlorite, triclopyr-based algaecides and aquatic herbicides, and adjuvants containing ingredients represented by the surrogate nonylphenol. Aquatic pesticides that are applied to waters of the U.S. in accordance with Federal Insecticide, Fungicide, and Rodenticide Act label requirements are not considered pollutants. However, pesticides or by-products that persist in or leave the treatment area after a specified treatment period are considered pollutants and require coverage under this General Permit.

Key requirements of the General Permit include the following:

- Compliance with the requirements of California Toxics Rule (40 CFR Part 131) and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SWRCB 2005);
- Compliance with other applicable receiving water limitations and effluent limitations;
- Issuance of a license to the permittee by the California Department of Pesticide Regulation; or, the permittee must work under the supervision of someone who is licensed if the aquatic pesticide is considered a restricted material;
- Preparation of, and adherence to, an Aquatic Pesticide Application Plan;
- Compliance with specific monitoring and reporting requirements of the permit;

- Adherence to all label instructions and terms of any applicable use permits;
- Maintenance of a Pesticide Application Log; and
- Compliance with Public Notice Requirements.

To obtain coverage under this General Permit, a discharger must submit a completed notice of intent, a vicinity map, and the first annual fee to the appropriate RWQCB. These items constitute a complete application package, the submittal of which authorizes the discharge of pollutants associated with the application of aquatic pesticides in compliance with the General Permit.

All aquatic pesticides used by Valley Water under the General NPDES Permit are applied in accordance with the permit requirements.

2.6.6 Clean Water Act Section 303 and Total Maximum Daily Load Program

Under CWA Section 303(d), states are required to identify a list of "impaired water bodies" (those that do not meet established water quality standards); identify the pollutants causing impairment; establish priority rankings for waters on the list; and commit to a schedule for development of control plans to improve water quality. Each RWQCB must update the Section 303(d) list every 2 years. Water bodies on the list have no further assimilative capacity for the identified pollutant. The Section 303(d) list identifies priorities to develop pollution control plans, also known as TMDLs, for each listed water body and pollutant. CWA Section 303 is overseen by USEPA and is administered by the SWRCB and its nine RWQCBs. Once a TMDL is developed and approved by USEPA, the SWRCB, and the relevant RWQCB, the implementation plan (if included in the TMDL) can be enacted.

The San Francisco Bay RWQCB has prepared, or is in the process of preparing, the following TMDLs applicable to water bodies in Santa Clara County:

- Guadalupe River Watershed Mercury – Approved by USEPA in 2010 and in implementation
- San Francisco Bay Mercury – Approved by USEPA in 2008 and in implementation
- San Francisco Bay Polychlorinated Biphenyls (PCBs) – Approved by USEPA in 2010 and in implementation
- Urban Creeks Pesticide Toxicity – Approved by USEPA in 2007 and in implementation
- San Francisquito Creek Sediment – Approved by USEPA in 2013 and in implementation
- Permanente Creek Selenium – Expected TMDL completion is unknown
- Stevens Creek Toxicity – Expected TMDL completion is unknown

The San Francisco Bay RWQCB implements and enforces TMDLs, primarily through the NPDES, the Basin Plan, WDRs, and Water Quality Improvement Plans. Additional information on TMDLs is available at the San Francisco Bay RWQCB's website: www.swrcb.ca.gov/sanfranciscobay/water_issues/programs/TMDLs.

The following USEPA-approved TMDLs are within those portions of Santa Clara County under the jurisdiction of the Central Coast RWQCB:

- Pajaro River Watershed Chlorpyrifos and Diazinon (including Pajaro River, Pajaro River Estuary, and Llagas Creek) – Approved by USEPA in 2013 and in implementation
- Pajaro River Fecal Coliform (including Pajaro River, San Benito River, Llagas Creek, and Tequisquita Slough) – Approved by USEPA in 2010 and in implementation
- Pajaro River Sediment (including San Benito River, Llagas Creek, and Rider Creek) – Approved by USEPA in 2007 and in implementation
- Pajaro River Nutrients – Approved by USEPA in 2016 and in implementation

The Central Coast RWQCB also implements and enforces TMDLs through the NPDES, Basin Plan, WDRs, and Water Quality Improvement Plans. Additional information on TMDLs is available at the Central Coast RWQCB's website: www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/303d_and_tmdl_projects.html.

The SMP will continue to comply with the requirements detailed in adopted TMDLs, including water quality monitoring and pollutant control.

2.7 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

2.7.1 California Endangered Species Act

The California Endangered Species Act (CESA) is defined in Section 2080 et seq. of the F&G Code. CESA prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with CESA, the California Department of Fish and Wildlife (CDFW) has jurisdiction over state-listed species (F&G Code Section 2070).

CESA requires the protection or preservation of all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, that are threatened with extinction. Also required to be protected or preserved are those species experiencing a significant decline which, if not halted, will lead to a threatened or endangered designation. CESA sets forth procedures by which individuals, organizations, or CDFW can submit petitions to the Fish and Game Commission requesting that a species, subspecies, or variety of plant or wildlife be added to, deleted from, or changed in status on the state lists of threatened and endangered species.

Like the FESA, CESA also allows for incidental take of listed species. Take is defined under F&G Code Section 86 as to "hunt, pursue, catch, capture, or kill, or attempt to

hunt, pursue, catch, capture, or kill." Habitat degradation or modification is not expressly included in the definition of take under the F&G Code. However, CDFW has interpreted take to include the "killing of a member of a species which is the proximate result of habitat modification" (CDFW n.d.). The process is outlined in CESA (F&G Code Section 2081). Section 2081(b) provides a means by which agencies or individuals may obtain authorization for incidental take of state-listed species. Take must be incidental to, and not the purpose of, an otherwise lawful activity. Requirements for an F&G Code Section 2081(b) permit include the identification of impacts on listed species; development of mitigation measures that minimize and fully mitigate impacts; development of a monitoring plan; and assurance of funding to implement mitigation and monitoring.

In June 2019, the Fish and Game Commission accepted a petition to list four species of bumble bees under CESA (CDFW 2019). These included two species that occur or historically occurred in Santa Clara County: the western bumble bee (*Bombus occidentalis*) and Crotch's bumble bee (*Bombus crotchii*). Agricultural interests sued CDFW, claiming that CESA's definition of a "species" does not cover insects. In November 2020, the Sacramento Superior Court ruled that insects are not eligible for listing under CESA (*Almond Alliance of California v. California Department of Fish and Wildlife*). However, in May 2022, the California Court of Appeal reversed the prior ruling, deciding that invertebrates are eligible for CESA listing.

Listed Species

State-listed and candidate species potentially occurring in the Program area include the following:

- Tiburon paintbrush, listed as Threatened
- Crotch's bumble bee (*Bombus crotchii*), candidate for listing
- San Francisco Bay-Delta longfin smelt (*Spirinchus thaleichthys*), listed as Threatened
- White sturgeon (*Acipenser transmontanus*), candidate for listing
- California tiger salamander, listed as Threatened
- Foothill yellow-legged frog, listed as Endangered
- Bank swallow (*Riparia riparia*), listed as Threatened
- California condor, listed as Endangered
- Bald eagle (*Haliaeetus leucocephalus*), listed as Endangered
- Swainson's hawk (*Buteo swainsoni*), listed as Threatened
- California Ridgway's rail, listed as Endangered
- California black rail (*Laterallus jamaicensis coturniculus*), listed as Threatened

- California least tern, listed as Endangered
- Least Bell's vireo, listed as Endangered
- Tricolored blackbird (*Agelaius tricolor*), listed as Threatened
- Salt marsh harvest mouse, listed as Endangered
- Mountain lion (*Puma concolor*), candidate for listing
- San Joaquin kit fox, listed as Threatened

These species are described in greater detail in Attachment C.

Take of these species will be avoided, either because SMP activities will not occur in locations or in ways in which take can occur or, because Valley Water will implement BMPs to avoid take. Nevertheless, if SMP activities occur in areas where BMPs may not be adequate to avoid take (e.g., for special-status species that are not fully protected and difficult to detect, such as California tiger salamander), an Incidental Take Permit (ITP) will be required. It is also possible that incidental take approval for SMP activities affecting state-listed species could be provided by the VHP for VHP-covered species, if the upcoming VHP amendment includes coverage of SMP activities.

2.7.2 Lake and Streambed Alteration Program

California's Lake and Streambed Alteration Program is regulated under Section 1600 et seq. of the F&G Code. Under F&G Code Section 1602, CDFW regulates projects that affect the flow, channel, or banks of rivers, streams, and lakes. F&G Code Section 1602 requires state and local governmental agencies, public utilities, and private individuals to notify and enter into a streambed or lakebed alteration agreement with CDFW before construction of a project that will:

- Substantially divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake;
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake.

F&G Code Section 1602 may apply to any work undertaken within the 100-year floodplain of any body of water or its tributaries, including perennial, intermittent, and ephemeral rivers, streams, or lakes in the state. In general, however, this language typically applies to any work within an active floodplain (i.e., a lowland area bordering a stream that is subject to flooding on a periodic basis) and/or associated riparian habitat of a river, stream, or lake that provides benefit to aquatic and terrestrial resources. F&G Code Section 1602 typically does not apply to drainages that lack a defined bed and banks, such as swales, or to isolated wetlands that are not hydrologically connected on the surface or subsurface to a stream, such as vernal pools.

CDFW has regulatory jurisdiction over the bed, bank, or channel of a stream, lake, or pond, as stated in F&G Code Sections 1600-1616. Under F&G Code Section 1602, CDFW administers the Lake and Streambed Alteration Program and may issue a Streambed Alteration Agreement (SAA) for projects within its jurisdiction. SAAs typically are issued through an application process (submittal of a notification package) and include restrictions on construction periods and locations, as well as avoidance, minimization, and mitigation measures for potential impacts on habitat associated with waters of the State. Because CDFW has discretionary approval authority, it is a responsible agency under CEQA (refer to further discussion in Section 2.10, California Environmental Quality Act). As such, projects must fully comply with CEQA before CDFW can finalize an SAA. All creeks, lakes, and ponds in the Program area, as well as associated riparian vegetation, are subject to CDFW jurisdiction under F&G Code Sections 1600-1616.

Protection of Birds

F&G Code Section 3503 prohibits the take, possession, or needless destruction of the nests or eggs of any bird. F&G Code Section 3503.5 makes it unlawful to take, possess, or destroy any bird, nests, or eggs of birds of prey (New World vultures, hawks, eagles, ospreys, falcons, and owls). Species that are federally protected by the MBTA may not be taken or possessed except as provided by rules and regulations adopted by the Secretary of the Interior in compliance with the MBTA (F&G Code Section 3513). Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW.

Nearly all native bird species occurring in the Program area are protected by the F&G Code. SMP activities such as vegetation management may require the removal of vegetation where migratory birds are nesting. Compliance with the F&G Code will be met through implementation of the BMPs requiring pre-activity surveys before SMP activities during breeding season so that take of migratory birds is avoided.

2.7.3 Native Plant Protection Act

The Native Plant Protection Act (F&G Code Section 1900 et seq.) is a state law that prohibits take of endangered or rare native plants (with some exceptions). The California Native Plant Society has developed a set of lists of native plants in California, categorized according to rarity. Plants on List 1A, List 1B, and List 2 meet the definitions of F&G Code Section 1901 and F&G Code Sections 2060 and 2067 as rare or endangered species.

Attachment C lists native, special-status plant species occurring or potentially occurring in the Program area. Attachment A includes BMP GEN-8 which focuses on avoiding impacts to special-status plant species and sensitive natural vegetation communities.

2.7.4 Fully Protected Species

Species that are fully protected from all forms of take are listed in F&G Code Section 3511 (birds), Section 5515 (fish), Section 4700 (mammals), and Section 5050 (amphibians). Fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of

livestock. In addition, Natural Community Conservation Plans (NCCPs) such as the VHP may provide take authorization for fully protected species covered by an NCCP.

Also, Senate Bill 147, approved in 2023, authorizes the CDFW to issue a permit under CESA authorizing take of a fully protected species due to the implementation of specified projects and under certain conditions. The SMP would qualify as a "maintenance project to critical regional or local water agency infrastructure" under Senate Bill 147, and therefore could obtain a take permit under CESA for fully protected species as necessary.

Fully protected species within the Program area include the following:

- Bald Eagle (*Haliaeetus leucocephalus*)
- California black rail (*Laterallus jamaicensis coturniculus*)
- California Ridgway's rail
- California condor
- California least tern
- Golden eagle (*Aquila chrysaetos*)
- White-tailed kite (*Elanus leucurus*)
- Ringtail (*Bassariscus astutus*)
- Salt marsh harvest mouse

These species are described in greater detail in Attachment C. BMPs will be implemented to avoid and/or minimize take of these species.

2.8 SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

The San Francisco Bay Conservation and Development Commission (BCDC) has regulatory responsibility over development in the San Francisco Bay and along the Bay's nine-county shoreline. BCDC works with federal, state, and local partners in the Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS) to manage dredging and disposal activities in the Bay Area. Formed in 1990, the LTMS Program is a collaborative partnership that involves regulatory agencies, resource agencies, and stakeholders that work together to maximize beneficial reuse of dredged material and minimize disposal in the Bay (BCDC 2021).

2.8.1 McAteer-Petris Act

The McAteer-Petris Act was enacted in 1965 establishing BCDC to promote responsible planning and regulation of the San Francisco Bay. The McAteer-Petris Act requires that "maximum feasible public access, consistent with a project be included as part of each project to be approved by the BCDC." BCDC jurisdiction in the San Francisco Bay Area

extends over the Bay, up to mean high tide and to 5 feet above mean sea level in marshes; and over a 100-foot shoreline band inland from the line of mean high tide or the line 5 feet above mean sea level adjacent to marshes. BCDC also has jurisdiction over salt ponds, which consist of all areas diked off from the Bay and used between August 1966 and August 1969 for the solar evaporation of Bay water in the course of salt production.

Within the Program area, any maintenance activities that are conducted within tidal waters of the South San Francisco Bay or areas determined to be within the shoreline band may require a permit from the BCDC.

Valley Water is currently authorized to perform SMP activities under BCDC Permit No. M1977-113.07, which expires on April 30, 2026. The existing permit was originally issued in February 1978 and, since that time, has been amended seven times. For SMP-3, Valley Water will either request an amendment to this BCDC permit or request an extension of 5 years for the amended permit (Amendment No. 7) through 2030. Valley Water is in compliance with conditions of the current BCDC Permit.

2.9 NATIONAL ENVIRONMENTAL POLICY ACT

NEPA requires federal agencies to include in their decision-making process appropriate consideration of all environmental effects of a proposed action and possible alternatives. Documentation of the environmental impact analysis and efforts to avoid or minimize the adverse effects of proposed actions must be made available for public notice and review. This analysis is documented in either an EA with a FONSI or an Environmental Impact Statement (EIS). NEPA compliance will be achieved for the SMP by USACE through preparation of an EA as part of the amended or new RGP process. Issuance of a FONSI is anticipated.

2.10 CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA (Public Resource Code Section 21000 et seq.) is the cornerstone of environmental law and policy in California. CEQA requires public agencies to assess and publicly disclose the environmental implications of proposed actions through the preparation of appropriate documents. The primary objectives of CEQA include:

- Ensuring that the potential environmental impacts of projects are disclosed to decision makers and the public;
- Ensuring that environmental damage is avoided, reduced, or compensated for by the implementation of carefully designed mitigation measures;
- Making the public aware of the reasons for an agency's approval of a project with significant, unavoidable, and unmitigable environmental impacts;
- Fostering cooperation between agencies in the review of projects; and
- Enhancing public involvement in the planning and review of projects that may affect local communities and their natural environment.

CEQA applies to discretionary activities proposed, implemented, or approved by California public agencies, including state, regional, county, and local agencies. The public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect on the environment is the lead agency for CEQA compliance, and this agency is responsible for preparing the environmental documentation for the project.

For the SMP, Valley Water served as lead agency for the preparation of the FSEIR (certified by Valley Water in January 2012) that evaluated the environmental impacts of SMP activities. Valley Water is also the lead agency for preparation of the Subsequent EIR that has been prepared to evaluate the environmental impacts associated with SMP-3 activities.

2.11 APPLICABLE REGULATORY GUIDANCE FOR SMP-3 MITIGATION PROGRAM

The mitigation concepts and approaches described in Chapter 10, *Mitigation Program,* were developed based on guidance from and collaboration with various regulatory agencies. Regulatory guidance documents that have informed development of the SMP's mitigation approach are described in more detail below.

2.11.1 2008 Mitigation Rule: U.S. Army Corps of Engineers and U.S. Environmental Protection Agency

As described in Section 2.2.3, Regional General Permit, in 2008 the USACE and USEPA issued the 2008 Mitigation Rule. The mitigation sequence established by the CWA Section 404(b)(1) guidelines is to avoid, minimize, and compensate for impacts. Mitigation is required to address residual impacts that are neither avoided nor minimized completely through other measures.

According to the 2008 Mitigation Rule, compensatory mitigation may involve the restoration (re-establishment or rehabilitation), establishment, enhancement, and/or preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved (Section 332.2). Of these options, restoration should generally be the first option considered (Section 332.3(a)(2)). The mitigation hierarchy established in the 2008 Mitigation Rule prioritizes mitigation alternatives as follows: 1) the purchase of mitigation bank credits, 2) the purchase of in-lieu fee credits, 3) permittee-responsible mitigation under a watershed approach, 4) permittee-responsible mitigation through on-site and in-kind mitigation, and 5) permittee-responsible mitigation through off-site and/or out-of-kind mitigation (Section 332.3 (b)). Mitigation required by USACE must be below top of bank (immediately adjacent to and providing benefits within USACE jurisdiction), below OHWM or the high tide line, or within adjacent wetlands that meet the federal three-parameter test (i.e., hydrology, hydrophytic vegetation, and hydric soils).

Implementation of mitigation projects must occur, to the maximum extent practicable, in advance of or concurrent with the activity causing the authorized impacts. This is particularly true when off-site mitigation is pursued. It is recognized that the on-site mitigation activities, by necessity, will likely occur during or following the maintenance activities. It is preferable to reduce the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of such functions

through mitigation. As described in the 2008 Mitigation Rule, mitigation ratios may be adjusted to address the temporal loss of functions.

The 2008 Mitigation Rule advises that compensatory mitigation projects (i.e., permittee -responsible compensatory mitigation, mitigation banks, and in-lieu fee mitigation) require written mitigation plans with the following components: objectives; site selection criteria; site protection instruments (e.g., conservation easements); baseline information (for impact and compensation sites); credit determination methodology; mitigation work plan; maintenance plan; ecological performance standards; monitoring requirements; long-term management plan; adaptive management plan; and financial assurances.

Valley Water will establish permanent mitigation by developing new permanently mitigated areas (PMAs) for projected impacts to wetlands and other waters of the U.S. for areas outside of existing PMAs. Mitigation options for establishing new PMAs may include land acquisition, conservation, and restoration projects to offset aquatic functions and values for the channels not yet accounted for in the established PMAs. The mitigation approach may also rely on the Santa Clara Valley Habitat Plan In-Lieu Fee Program, through which SMP mitigation can be achieved by purchasing in-lieu fee credits to offset impacts to wetlands and waters of the U.S.

2.11.2 California Fish and Game Code: California Department of Fish and Wildlife

CDFW describes mitigation requirements through various sections of the California F&G Code and associated regulations related to lake and streambed habitats and species that receive protection under CESA, as summarized below and described in Section 2.7.2:

- Section 1602 Streambed Alteration Agreements – As a condition of issuing SAAs that allow impacts to the bed, channel, or bank of rivers, streams, lakes, and associated riparian habitat, CDFW may require measures to protect aquatic and wildlife resources, which may include mitigation.

- California Endangered Species Act – CESA requires protection and preservation of all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates and plants and their habitats that are threatened with extinction and those experiencing a significant decline which, if not halted, will lead to a threatened or endangered designation. Such protection and preservation may be achieved through mitigation requirements.

- California F&G Code Section 2081 and California Code of Regulations (CCR) Title 14 Section 783 – CDFW may issue permits authorizing the incidental take of species that are listed as threatened or endangered or are candidates for such listing under CESA. 14 CCR Section 783 implements the requirements of F&G Code Sections 2080 and 2081 and CESA (described above), which state that impacts from the incidental take of CESA-protected species must be minimized and fully mitigated.

2.11.3 U.S. Fish and Wildlife Service and National Marine Fisheries Service

USFWS and NMFS are charged with implementing and enforcing FESA. Conditions of incidental take approvals provided by USFWS and NMFS may include mitigation requirements. Valley Water biologists will evaluate all SMP activities for the potential to affect FESA-protected species. In the Notice of Proposed Work (NPW) and Annual Summary Report (ASR), for any item that may affect FESA-listed species, a Valley Water biologist will indicate whether the activity is likely to adversely affect the species and will describe any mitigation to be used to compensate for these impacts.

2.11.4 Regional Water Quality Control Boards

The San Francisco Bay and Central Coast RWQCBs have established basin plans for the San Francisco Bay and Monterey Bay watersheds. These plans identify beneficial uses and water quality standards for the watersheds and incorporate by reference the CWA Section 404(b)(1) guidelines, which apply to wetlands and other waters, including streams. In considering mitigation for impacts to wetlands, the RWQCBs follow the California Wetlands Conservation Policy (Executive Order W-59-93). The objectives of this policy include the following:

- To ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- To reduce procedural complexity in the administration of state and federal wetlands conservation programs.
- To encourage partnerships to make restoration, landowner incentive programs, and cooperative planning efforts the primary focus of wetlands conservation.

Also, the Keene-Nejedly California Wetlands Preservation Act (AB 2875) enacted in 2024, makes it state policy to ensure no net loss and long-term gain in the quantity, quality, and permanence of wetlands (i.e., waters of the state protected under the Porter-Cologne Act) acreage and values in California.

For the RWQCBs, the preferred mitigation approach for SMP activities is in-kind, on-site, near-site, in-water body, and in-watershed mitigation over out-of-kind, off-site land acquisition approaches. Valley Water will continue to look for in-kind mitigation opportunities within its jurisdiction to offset impacts that may result from SMP activities.

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CHAPTER 3. MAINTENANCE PLANNING AND IMPACT AVOIDANCE

This chapter describes how measures to avoid and reduce impacts are incorporated into Valley Water's maintenance practices. Effective planning requires a clear understanding of the maintenance site location and the extent and nature of specific maintenance work activities. It also requires knowledge of the stream system's natural and aquatic resources. Understanding these resources, their locations, and how they interact informs an approach to avoid, minimize, and mitigate environmental impacts when routine maintenance activities take place.

3.1 PROGRAM ENVIRONMENTAL PRINCIPLES

A key policy established by Valley Water's Board of Directors specifically addresses the need to minimize environmental impacts: *"A net positive impact on the environment and providing benefits equitably across communities is required in order to accomplish the Valley Water mission.*"

Reflecting this policy, the SMP developed the following maintenance principles:

1. Avoid unnecessary intervention. Maintenance should only be done when it is determined to be necessary and appropriate to maintain conveyance; maintain the structural integrity of stream banks and beds; maintain access; protect public safety; or ecologically improve watershed ecosystems, streams, and/or other natural resources.

2. Consider the ecological system and its processes, including adjacent land uses, when determining maintenance necessity. If maintenance is necessary, then, before selecting sediment, vegetation, or bank stabilization treatments, work to understand the channel system and its formative processes to know why the reach is functioning as it is. Established maintenance guidelines (MGs) are a method to document and centralize applicable information to be used to guide appropriate maintenance activities. Where channels are bordered by developed land uses, flood protection requirements may limit stream maintenance options. Maintenance activities will not increase the level of flood protection provided to surrounding lands as defined by as-built information for the reach or increase the dimensions of an unmodified channel.

3. Seek maintenance solutions that minimize impacts on the environment. Implementing best management practices (BMPs), work windows, work activity program requirements, and SMP limits, and incorporating geomorphic approaches, when possible, can assist in minimizing impacts.

4. Integrate maintenance activities toward sustainability to reduce frequency of maintenance. The approach for channel maintenance should integrate effective activities that, in time, will reduce the overall need for continued maintenance support.

These maintenance principles collectively guide the SMP's integrated maintenance approach, while taking into consideration a variety of parameters, including existing conditions, flood protection, natural processes, and ecological health.

3.2 MAINTENANCE PLANNING

Valley Water's regularly scheduled field inspections inform the maintenance planning and prioritization process. Valley Water staff conduct annual inspections of channels to identify bank erosion, levee erosion, levee damage from animals, in-channel blockages (debris, large woody debris [LWD], downed trees), sediment deposition, excessive bed scour, and in-channel vegetation growth that may impede flow conveyance. Inspection staff conduct a visual assessment of the channels. Issues requiring potential maintenance work are documented and photos are taken of the sites. Information gathered during the inspections is forwarded to technical staff for quantitative analysis and assessment, which may include the collection of survey data and hydraulic modeling. Other issues, such as trash that needs to be removed, public safety issues, and opportunities for ecological improvement, may also be identified during the course of inspections.

Work planning and prioritization to assess maintenance needs in light of the potential flood hazard relies on data from the as-built plans; MGs; and associated flow data, including cross-sections, where they exist. In addition, data from Valley Water hydraulic models and the corresponding geographic information system (GIS) flooding and facility data are used. These documents provide channel dimensions and type (e.g., natural, concrete, levee) on a reach-by-reach basis, as well as dimensions and types of other in-channel features such as culverts and bridges.

Valley Water's annual stream maintenance planning, implementation, and reporting process occurs in three phases: (1) work needs assessment and notification, culminating in the Notice of Proposed Work (NPW); (2) implementation of annual routine stream maintenance work; and (3) submittal of an Annual Summary Report (ASR). Once a maintenance activity has been identified, Valley Water staff determine the requirements for reporting the proposed activity to regulatory agencies. Proposals for certain activities must be submitted to and approved by appropriate regulatory agencies as part of the NPW process. For information concerning the annual notification and reporting cycles, including a detailed description of NPW and ASR requirements, please see Chapter 11, *Program Management and Reporting,* Attachment I, and Attachment J.

3.3 WORK APPROACH IN SENSITIVE HABITATS

Valley Water conducts its work in consideration of the ecological values in these channels and facilities, including some channels that support resources considered particularly sensitive.

"Sensitive habitats," for the purposes of this document, are defined as channels that:

- Support federally listed or state-listed threatened or endangered species;
- Support state species of special concern and their habitats;
- Are designated as Critical Habitat under FESA;
- Are designated as special-status natural communities; and/or

- Are designated as special aquatic sites as defined by USACE and RWQCBs (e.g., wetlands, riffle and pool complexes, and beneficial uses).

Special-status natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to the environmental effects of projects. These communities may or may not contain special-status species or their habitat. The most current version of CDFW's *List of Natural Communities* (https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities) indicates which natural communities are designated as having special status under the current State of California classification.

Valley Water employs procedures to determine how and when maintenance will occur in sensitive habitats, identify appropriate BMPs to avoid and minimize habitat and species impacts, and determine mitigation requirements. Procedures used to approach work in sensitive habitats include the following:

1. Valley Water identifies maintenance needs, activities, and locations that may occur in sensitive habitat.

2. Prior to initiating the work activity, a Valley Water qualified biologist familiar with the life history requirements of the listed species conducts an evaluation. This assessment may include review of aerial photography, GIS-based review of habitat mapping or species distribution, specific field surveys, and any other information pertinent to the site or species. In limited instances, a Designated Individual may conduct surveys for nesting birds in lieu of a qualified biologist as outlined in BMP GEN-6.

3. When a Valley Water qualified biologist identifies sensitive habitat in the work area, the limits of the affected resources may be mapped or delineated in the field. For each activity, a Valley Water biologist identifies the BMPs or other recommendations to be implemented to avoid and minimize impacts, based on the sensitive habitats and/or special-status species that may be present. The staff implementing the maintenance work then ensure that the recommendations and/or BMPs are implemented before and during the maintenance activity.

Each year, Valley Water conducts required BMP and resource protection training for the field operations unit's staff. Designated Individuals (as defined in BMP GEN-6) also receive additional training from the Valley Water biologist to conduct nesting bird surveys under certain circumstances. Training is also provided to contractors and other Valley Water staff who may be working on a SMP project. Where sensitive resources are present on or adjacent to a work site, maintenance crews are informed of site-specific requirements. This may include identifying species and protected resources; creating and implementing buffer zones; and identifying procedures when work may proceed within buffer zones.

Work windows and BMPs are used by Valley Water to avoid and minimize potential environmental effects; these approaches are described in Sections 3.4 and 3.5.

3.4 WORK WINDOWS

Work windows, which establish when maintenance activities are permissible, are used to minimize and/or avoid potential impacts to protected species and habitats. Tables 3-1 and 3-2 present work windows for various types of locations and activities. Figures 3-1 and 3-2 provide maps of creeks that support the fish identified in the tables. Work activities described as “in-channel” means the work would occur up to the bankfull elevation or below the ordinary high water mark (OHWM) in a creek or channel or below the mean high water mark (MHWM) in a tidal channel or slough.

In addition to the work windows described below, the following general work practices are applied related to wet soil conditions or work continuing after October 1:

- All maintenance vehicles shall stay on the maintenance roads when the soil is damp to avoid and minimize disturbed soil conditions within the channel bed and bank.

- Valley Water will have erosion and sediment control materials available and on-site after October 1 at each maintenance site that does not have post-construction erosion and sediment control measures in place.

TABLE 3-1
In-Channel (Below OHWM) Work Windows by Activity Type

Activity Type	Work Window	Work Window Extensions[1, 2, 3] and Seasonal Restrictions		
		General Conditions	Salmonid Streams[4]	Other Streams
Ground-Disturbing Activities				
Vegetation Management				
Vegetation Removal (with ground disturbance) and Tree Removal	June 15–October 15	None	Work may continue until December 31 or until significant rainfall.[5]	Significant rainfall restrictions apply to both dry and active channels. Work in a wetted channel may continue until December 31 or until significant rainfall.[5]
Sediment Removal	June 15–October 15	No new in-stream activities may be initiated after October 15.	This project must be at least 50% complete by October 15. Work may continue until October 31 or until significant rainfall.[5]	Extended Work Window Reaches[7]: December 31 or until significant rainfall.[5] All Other Streams: November 30 or until significant rainfall.[5]
Bank Stabilization	June 15–October 15	No new in-stream activities may be initiated after October 15.	The project must be at least 50% complete by October 15. Work may continue until October 31 or until significant rainfall.[5]	The project must be at least 50% complete by October 15. As an exception, certain new projects that will be completed in 5 days or less may not be 50% complete by October 15.[8] Work may continue until November 30, or until significant rainfall.[5]

Activity Type	Work Window	Work Window Extensions[1, 2, 3] and Seasonal Restrictions		
		General Conditions	Salmonid Streams[4]	Other Streams
Management of Animal Conflicts (with ground disturbance)	June 15–October 15	No new in-stream activities may be initiated after October 15.	The project must be at least 50% complete by October 15. Work may continue until October 31, or until significant rainfall.[5]	The project must be at least 50% complete by October 15, or a new project must be completed in 5 days or less.[8] Work in streams with water may continue until November 30 or until significant rainfall.[5] No restrictions are imposed on work within dry streams.
Activities That Do Not Involve Ground Disturbance				
Vegetation Management				
Vegetation Removal ~~(without ground disturbance)~~ and Pruning (<6" dbh and tree removal 6-12" dbh)	Year-Round	No work shall occur within 24 hours prior to and following significant rainfall.	Work may occur within the wetted portion of the channel from October 16 to December 31 except when wheeled or tracked equipment needs to access the site by crossing a creek, ponded area, or secondary channel. From October 16 to December 31, work activities will not occur within wetted areas of the channel unless the pre-activity surveys and biological monitoring described in BMPs GEN-6.1, GEN-6.2, GEN-7, GEN-10, GEN-11, GEN-12, GEN-13, GEN-16, and GEN-18, as applicable, are performed.	None.[9]

Activity Type	Work Window	Work Window Extensions[1, 2, 3] and Seasonal Restrictions		
		General Conditions	Salmonid Streams[4]	Other Streams
			From January 1 to June 14, this work may not occur within wetted areas of the channel. Work may occur year-round if the creek is dry.	
Mowing	Year-Round	No work may occur within the wetted portion of the channel.	None.	None.
Herbicide Application[6,9]	June 15 – October 15	No work shall occur within 24 hours prior to and following significant rainfall.	Work may continue until December 31 or until significant rainfall.[5] Within steelhead critical habitat, where the stream reach is completely dry, surfactants may be used between June 15 and October 15.	Work may continue until December 31 or until significant rainfall.[5]
Management of Animal Conflicts (without ground disturbance)	Year-Round	No work shall occur within 24 hours prior to and following significant rainfall.	Work may occur within the wetted portion of the channel from October 16 to June 14 except when wheeled or tracked equipment needs to access the site by crossing a creek, ponded area, or secondary channel. From October 16 to June 14, work activities will not occur within wetted areas of the channel unless the pre-activity surveys and biological monitoring described in BMPs GEN-6.1, GEN-6.2, GEN-7, GEN-10, GEN-11, GEN-12, GEN-13, GEN-16, and GEN-18, as applicable, are performed.	None.

Activity Type	Work Window	Work Window Extensions[1, 2, 3] and Seasonal Restrictions		
		General Conditions	Salmonid Streams[4]	Other Streams
Minor Maintenance				
All minor maintenance activities	Year-Round	Mechanized equipment may not cross a wetted creek and water quality may not be affected by work.	Work activities will not occur within the wetted areas of the channel unless the pre-activity surveys and biological monitoring described in BMPs GEN-6.1, GEN-6.2, GEN-7, GEN-10, GEN-11, GEN-12, GEN-13, GEN-16, and GEN-18, as applicable, are performed.	None

Notes: Attachment A includes species-specific BMPs that will be employed for species that could be present within the SMP-3 streams.

[1] Work window extensions are to be authorized by agency representatives.

[2] After October 1, 72-hour look-ahead weather forecasts from the National Weather Service (or other qualified local vendor) are consulted to prepare for possible winterization measures. If significant rainfall is forecasted within the coming 72-hour window, maintenance work that may result in sediment runoff into the stream shall be stopped to allow adequate time to complete erosion control measures. Winterization materials will be available and installed prior to significant rainfall.

[3] Valley Water will request a work window extension from the regulatory agencies by October 1 to proceed with work after October 15. Refer to BMP GEN-1 in Attachment A for more information on work extensions for each type of maintenance activity.

[4] Requirements for salmonid streams will also protect other state-listed and federally listed fish species (i.e., the green sturgeon and longfin smelt) that occur in tidal reaches.

[5] Significant rainfall is a local rainfall event of 0.5 inch or greater falling within the subject watershed within a 24-hour period.

[6] Herbicide application can occur in California red-legged frog and California tiger salamander SMP potential range map areas only when the application area is dry and no rain is forecast for the next 48 hours.

[7] Extended work window reaches are defined as the following stream sections: 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).

[8] Any projects completed in 5 days or less would be simple projects that do not require dewatering

[9] Instream herbicide restrictions are provided in BMP GEN-2 and include requirements to comply with the federal injunctions for steelhead and California red-legged frogs. These injunctions do not include work windows. All herbicide use will comply with state and federal laws.

TABLE 3-2
Non-In-Channel (Above OHWM) Work Window

Work Activity	Year-Round, except where mechanized equipment crosses a creek or water quality is otherwise affected	Date-Specific Work Period
Vegetation Management (including pruning, limb removal, vegetation removal <6" dbh, and tree removal 6-12" dbh)	X	
Herbicide[1]	X per Material Safety Data Sheet and product label limitations	–[2]
Mowing	X	–[3]
Grazing[4]	X	
Management of Animal Conflicts	X per special-status species and pesticide requirements	
Bank Rehabilitation Mitigation	X	
Encampment Cleanup Mitigation	X	
Minor Maintenance	X	

Notes: dbh = diameter at breast height; X = work is allowed

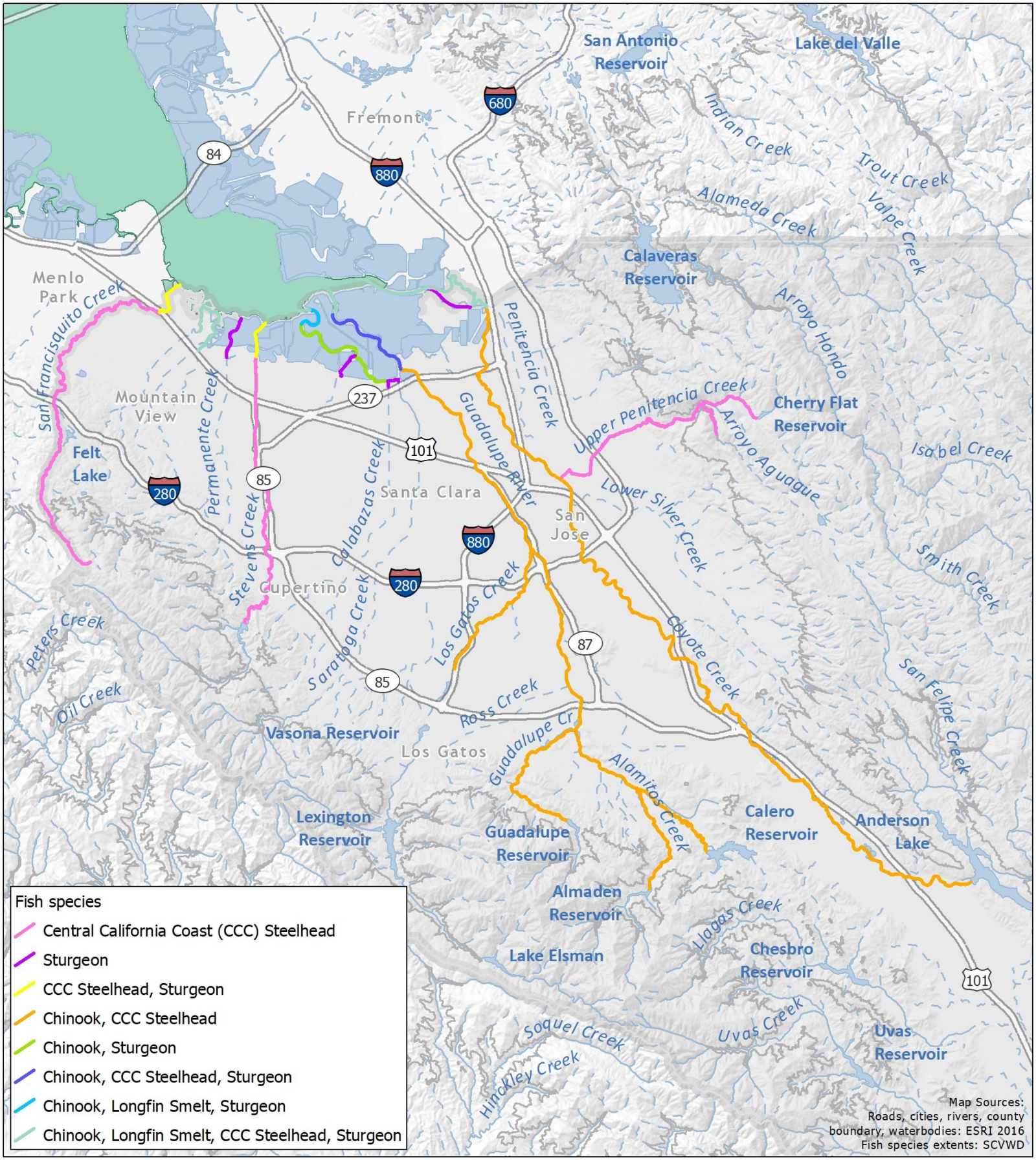
BMPs, included in Attachment A, will be implemented for all work activities as part of the SMP.

[1] Herbicide use on terraces will be limited to times when there is no flowing or ponded water on the terrace and when no rain is forecast for the next 48 hours.

[2] Herbicide application can occur in California red-legged frog and California tiger salamander SMP potential range map areas only when the application area is dry, and no rain is forecast for the next 48 hours.

[3] Mowing shall not occur within 48 hours after a significant rainfall event.

[4] Grazing animals shall be restricted from entering the channel, all flowing and standing waters, and wetland habitats.

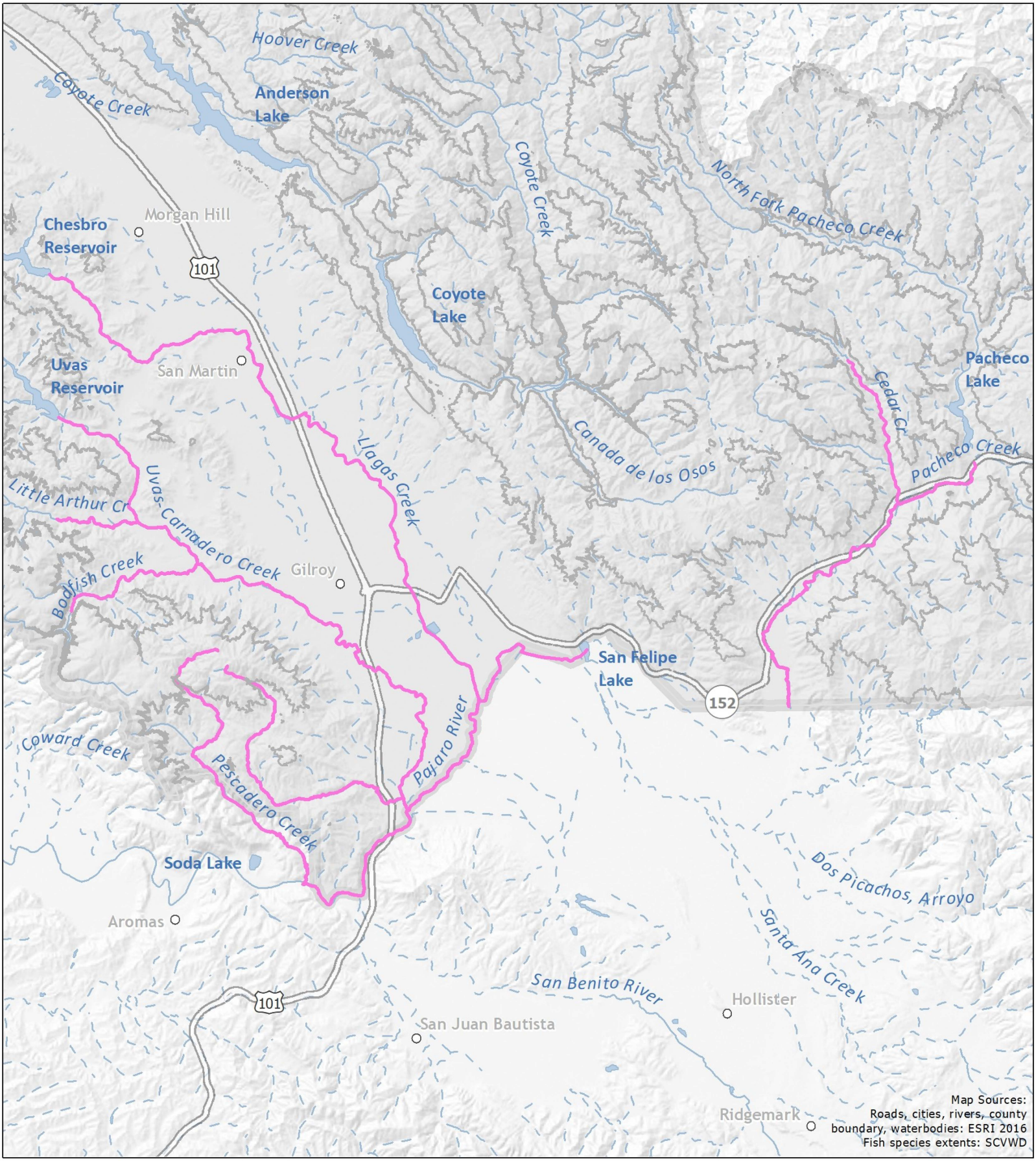


Santa Clara County
1000 ft contour
Waterbody
Perennial stream
Intermittent stream

N
0 2 4 8 Kilometers
0 1 2 4 Miles

Figure 3-1. Protected Fish Species Distribution in Northern Santa Clara County

Santa Clara Valley Water District
SMP3 Manual
Stillwater Sciences



Central California Coast (CCC) Steelhead
Santa Clara County
1000 ft contour
Waterbody
Perennial stream
Intermittent stream

N
0 2 4 8 Kilometers
0 1 2 4 Miles

Figure 3-2. Protected Fish Species Distribution in Southern Santa Clara County

Santa Clara Valley Water District
SMP3 Manual
Stillwater Sciences

3.5 BEST MANAGEMENT PRACTICES

BMPs are operational and procedural practices developed to protect natural resources and the health and safety of maintenance workers and the general public. These measures are designed to avoid or minimize impacts associated with stream maintenance activities. Individual BMPs may be applied program-wide or on a site--by--site basis to protect the site and the surrounding area. As discussed in Section 3.1, BMPs enable Valley Water to implement maintenance solutions that avoid and minimize impacts on the environment, consider the ecological system around the project, and integrate maintenance activities toward sustainability.

BMPs are evaluated annually and revised as needed to ensure their effectiveness. When BMPs are revised, regulatory agencies are notified of BMP revisions prior to implementation. BMP revisions do not require amendments to the Program's permits. Valley Water staff and contractors are trained annually on the BMPs, including revisions that have been confirmed with regulatory agencies. Attachment A includes the table of Program BMPs organized by Program activities and specific environmental resources. A brief description of each BMP group is provided below.

3.5.1 Pre-Project Planning and General BMPs (GEN-X)

Pre-project planning BMPs are employed prior to on-site maintenance work and are used to identify site requirements for dust control, hazardous materials management, sediment stockpiling, water quality protection, dewatering planning, vehicle maintenance, site design constraints, public safety, fire protection, and protection of sensitive biological and cultural resources. General BMPs include standard construction practices, worker safety practices, and impact avoidance measures.

3.5.2 Vegetation Management (VEG-X)

Vegetation management BMPs provide avoidance and minimization of impacts caused by vegetation removal, pruning, herbicide application, and grazing. ~~Valley Water minimizes impacts by specifically targeting emergent vegetation in the late winter and spring.~~ This practice establishes an annual approach with less intensive treatments and reduced impacts, compared to a less frequent approach with more intensive treatments and substantially higher impacts. Valley Water's vegetation management approach encourages natural recruitment and growth of native species to outcompete non-native or undesirable vegetation where feasible. Valley Water also employs techniques to minimize impacts during herbicide application (e.g., using products with low toxicity levels, spot spraying and direct stump application instead of broadcast spraying). All herbicide applicators comply with California Department of Pesticide Regulation (CDPR) licensing requirements.

3.5.3 Sediment Removal (SED-X)

Sediment removal BMPs provide guidance to protect groundwater resources, prevent downstream scouring, and restore channel features and berm bypasses where possible. Sediment removal in channels is typically performed when the deposition is reducing flow conveyance to less-than-acceptable levels. Sediment removal assessments are verified by field measurements and hydraulic modeling for facilities with MGs.

Prior to beginning sediment removal activities, access, staging, travel, water diversion, work boundaries, and habitat values are identified and evaluated. Valley Water also assesses methods to minimize vegetation removal, impacts to aquatic habitat, and the amount of temporary grading work needed to construct access paths/ramps. Stream flow diversions may be necessary to remove sediment from active channels. Dewatering may involve installing diversion dams, pumps, and energy dissipation tools to minimize potential water quality impacts. Sediment may also be removed from outside the low flow channel to avoid impacts to stream flows. Sediment removal is performed during the summer construction season to avoid impacts to spawning and migrating anadromous salmonids. Dewatering and fish relocation BMPs ensure that potential impacts from sediment removal activities are reduced.

3.5.4 Bank Stabilization (BANK-X)

Bank stabilization BMPs include measures to prevent downstream erosion and protect water quality. Prior to beginning work, Valley Water assesses site-specific parameters (e.g., access and geotechnical constraints, hydraulics, geomorphic conditions, soil, presence of special-status species) and evaluates habitat values within the stream bed/bank to inform the maintenance approach and determine the bank repair method(s). Access, staging, travel, water diversion, exact areas of work, habitat values, and locations of sensitive habitat are also assessed prior to initiating bank repair activities. Past bank stabilization projects are prioritized for any follow-up maintenance for up to two years after construction. Typically, follow-up work is far less intensive than the original bank repair work.

Stream flow diversions may be required, which involve installing diversion dams, pumps, and energy dissipation tools to minimize water quality impacts. Dewatering, fish relocation, and erosion control BMPs ensure that potential impacts from the bank repair activities are reduced.

Valley Water seeks to select the softest bank stabilization repair method that will stabilize the bank and limit further erosion. Bank stabilization methods may involve either the sole use of native vegetation or other bioengineered design techniques, or a combination of hardscape, native vegetation, and bioengineered design techniques. Table 6-1 in Chapter 6, Bank Stabilization, shows the parameters considered in selecting the appropriate repair methods. In designing and implementing bank repair projects, Valley Water uses the standard designs shown in Attachment D, Bank Stabilization Methods, which are based on industry standards for soft, hybrid, and hard bank stabilization techniques.

3.5.5 Post-Project Restoration (REVEG-X)

Post-project restoration BMPs provide guidance for planting vegetation at work sites where ground-disturbing activities have occurred to restore the site to pre-maintenance conditions.

3.5.6 Management of Animal Conflicts (ANI-X)

Animal conflict management BMPs focus on lethal controls. Implementation of lethal controls have the highest potential for environmental and biological impacts and, therefore, is guided and directed by wildlife biologists. Surface barrier applications will be

installed to prevent burrowing in an area no longer than 300 feet and above OHWM. Slurry-type mixes used to fill rodent burrows will be prevented from entering waterways by implementing proper erosion control measures. Depredation permits will be acquired from CDFW if needed for certain species.

3.5.7 Use of Pesticides (HM-X)

Pesticide use BMPs include guidance on posting notices of pesticide use at work sites according to label requirements and use of products with the lowest toxicity at the lowest practical rates. These practices minimize exposure to the public, domestic animals, wildlife, non-target vegetation, and water quality.

3.6 TIERED APPROACH FOR IMPACTS TO LISTED SPECIES

Valley Water has developed a three-tiered approach to determine whether and where take of listed species could potentially occur, where measures to avoid and minimize impacts on listed species and their habitats are necessary, and whether take of listed species could still occur with implementation of those measures. The tiered approach helps staff identify resource and site sensitivity and prioritize impact avoidance and minimization measures (AMMs) and/or BMPs. The tiered approach may vary from species to species at each maintenance location depending upon site-specific conditions and whether take of individuals or loss of habitat will occur. Note that, for any SMP activities that are covered by the VHP, Valley Water will comply with applicable VHP conditions rather than following the tiered approach described below. However, this tiered approach will still be implemented for any activities or species (e.g., in Baylands areas) that are not covered by the VHP.

- **Tier 1 – No Impact.** Maintenance activities will occur in stream reaches inaccessible to state-listed and/or federally listed species, in areas where no suitable breeding habitat for listed species is present, in areas where work may occur within the geographic range of the species but activities would occur in the dry season when breeding habitat is not present and disturbance to habitat would not occur, and/or where there is no connectivity between the site and known or potential breeding habitat (so that non-breeding individuals can also be presumed to be absent). No take of listed species will occur as a result of Tier 1 activities, and no compensatory habitat mitigation will be necessary for Tier 1 activities.

- **Tier 2 – Low Impact.** Maintenance activities will occur in areas where one or more state-listed and/or federally listed species are known to occur or could possibly occur, suitable breeding or non-breeding habitat is present, and/or there is connectivity between the maintenance site and suitable breeding habitat. However, for these activities, impacts on individuals can be avoided through the implementation of AMMs and BMPs (e.g., preconstruction surveys, exclusion of individuals from the maintenance site, and/or implementation of non-disturbance buffers). Depending on the sensitivity of the work area and the likelihood that individuals could move into the work area after pre-construction surveys are conducted, some of these activities may require an on-site biological monitor to be present while work is conducted. For Tier 2 activities, no direct take of individuals, including handling of individuals for relocation, will occur. In addition, take in the form of

permanent loss of habitat will not occur, and therefore, no compensatory habitat mitigation will be necessary. However, Tier 2 activities have some potential for take in the form of disturbance or harassment (if individuals are present in the area but not directly handled, injured, or killed) and temporary habitat disturbance.

- **Tier 3 – Moderate/High Impact.** Similar to Tier 2, Tier 3 maintenance activities will occur in areas where state-listed and/or federally listed species are known to occur or could possibly occur, either because suitable breeding habitat is present or there is connectivity between the maintenance site and suitable breeding habitat. However, for Tier 3 activities, federally listed and state species cannot be effectively excluded from the maintenance site, pre-construction surveys cannot definitively determine the presence or absence of the species, and/or take of individuals (including handling of individuals for relocation) or take in the form of permanent loss of habitat cannot be avoided. For Tier 3 projects:

    - During construction, these activities are expected to require implementation of standard impact AMMs and BMPs and may require an on-site biologist to be present while work is conducted.

    - To offset any permanent impacts on listed species and/or habitat, compensatory mitigation may be required. The mitigation ratio may vary depending on the scope and extent of the impact and/or quality of habitat affected.

These three impact tiers are summarized in Table 3-3 below. Valley Water will use these tier definitions to evaluate and screen potential maintenance activities that will be covered under the SMP.

TABLE 3-3
Impact Tiers for Maintenance Program Activities

Level of Impact	Tier 1 No Impact	Tier 2 Low Impact	Tier 3 Moderate/ High Impact
No potential for the species to occur	X		
Potential for species to occur but activity would not cause disturbance/harassment or impacts to species	X		
Temporary habitat impacts (no compensatory mitigation)		X	
Indirect disturbance or harassment of individuals		X	
Permanent habitat impacts (compensatory mitigation)			X
Handling individuals to move them out of harm's way			X
Take of individuals due to injury or mortality			X

3.7 MAINTENANCE GUIDELINES

3.7.1 Purpose and Objectives

Valley Water uses MGs to assess, identify, and prioritize where stream maintenance actions are needed. MGs analyze and evaluate channels under a range of sediment deposition and vegetative growth conditions. Using MGs, Valley Water stream managers can compare existing sediment and vegetation conditions to previous conditions and evaluate how current conditions are reflected in simulated water surface elevations and roughness conditions. In this way, MGs are used to assess the urgency of maintenance work and identify which creeks should be prioritized for maintenance work. MGs are not developed for all Valley Water channels, but Valley Water has completed MGs for 40 creeks. ~~is on schedule for developing 40 by the end of 2023.~~ This includes a total of 40 creeks and approximately 350 reaches. In general, where Valley Water has defined flood protection Level of Service (LOS) targets based on engineering studies and design, MGs can be more definitive in their use. Valley Water has not developed MGs for any unmodified channels. Maintenance work conducted in unmodified channels is kept to a minimum, and is typically related to providing mandated fire protection, removing invasive plant species, removing local blockages, or protecting public safety. While maintenance activities conducted on unmodified channels may have a flow conveyance benefit, work is not conducted to meet a defined flow conveyance target.

Figures 3-3a, 3-3b, and 3-3c provide examples of MG nomographs for Lower Silver Creek and San Francisquito Creek. In the graphs shown in Figures 3-3a, 3-3b, and 3-3c, water surface elevations (plotted along the x-axis) are related to Manning's roughness coefficient ***n*** (plotted along the y-axis) for the creek reach under different capacity conditions (shown as solid or dashed lines according to the reductions described in the graph legend). The solid lines represent water surface elevations and roughness

conditions according to the engineered designed channel. Dashed lines indicate reduced channel capacity, with given percentages reflecting different levels of sediment accumulation in the channel.

Figure 3-3a for Lower Silver Creek, Reach 5 illustrates that, under the most recently observed conditions, roughness estimates and channel capacity conditions indicate that maintenance by either vegetation management or sediment removal is not necessary at this time. Figure 3-3b for San Francisquito Creek, Reach 1b illustrates that, under existing roughness conditions, the channel should be monitored for potential maintenance in the future. In Figure 3-3b, note how, if instream capacity in the reach were to be reduced by 30% under the existing roughness conditions, then maintenance would be necessary. Finally, Figure 3-3c for Lower Silver Creek, Reach 10 illustrates that, under existing roughness conditions, maintenance is required under all channel capacity conditions, either the designed channel capacity or any of the reduced channel capacity scenarios. Using the Figure 3-3c MG, Valley Water stream planners would look to identify whether vegetation management activities could be conducted along Lower Silver Creek, Reach 10 that would reduce the target roughness enough to bring the surface water elevations back down to the area of the graph where no maintenance is required.

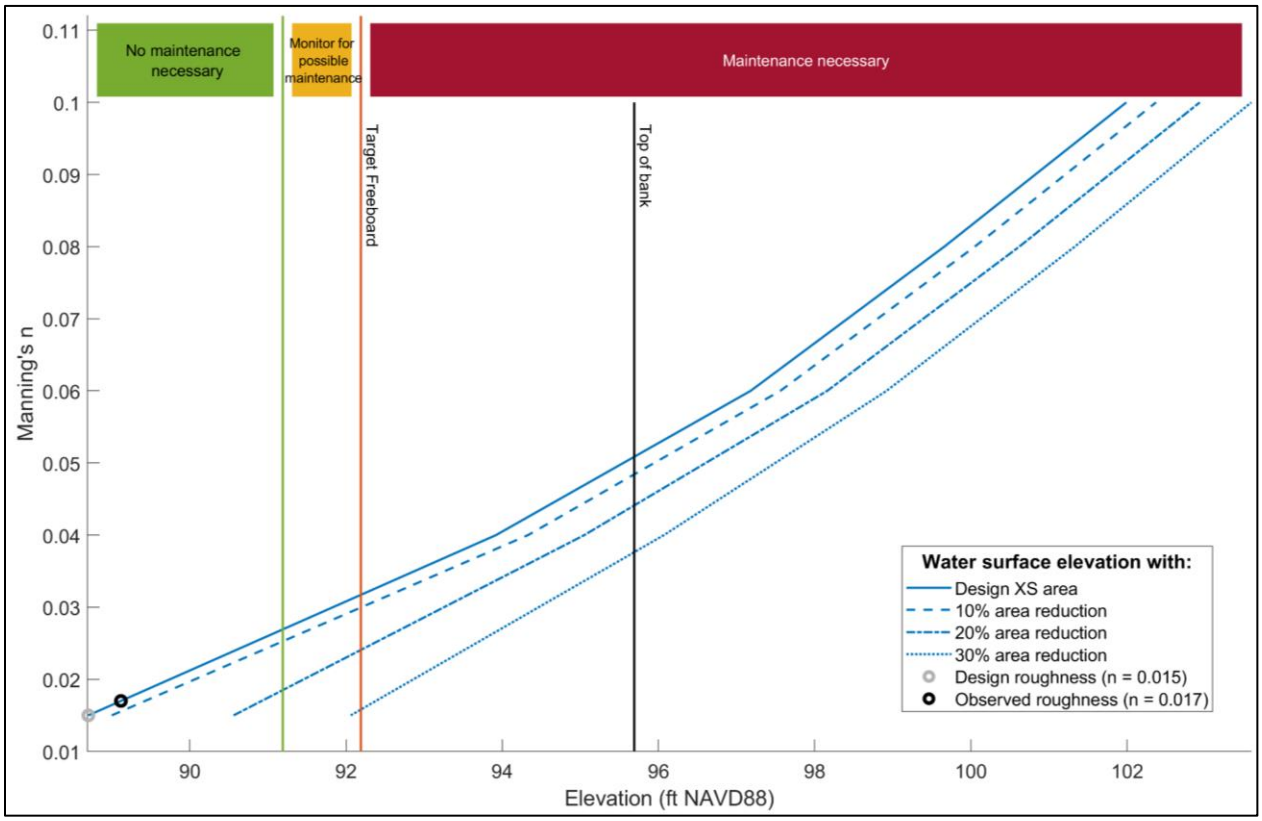


FIGURE 3-3a
Example Maintenance Guideline Nomograph for Lower Silver Creek – Reach 5

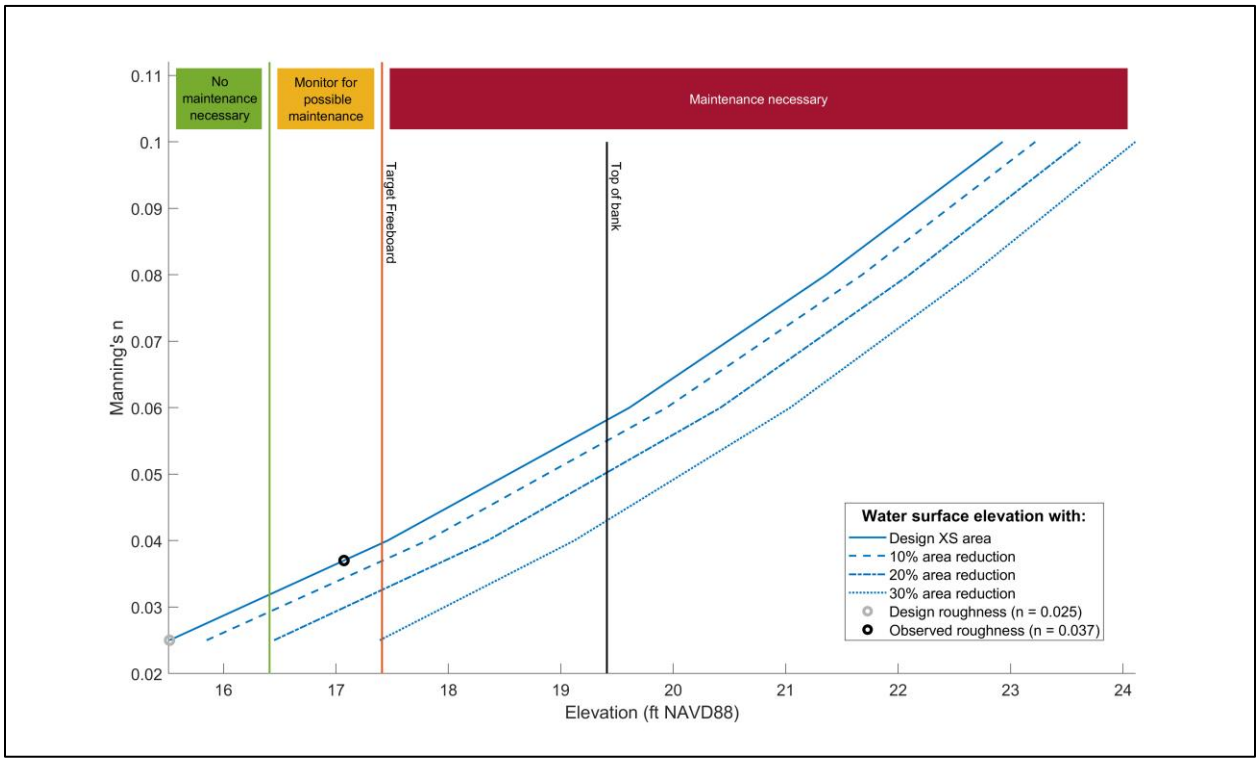


FIGURE 3-3b
Example Maintenance Guideline Nomograph for San Francisquito Creek – Reach 1b

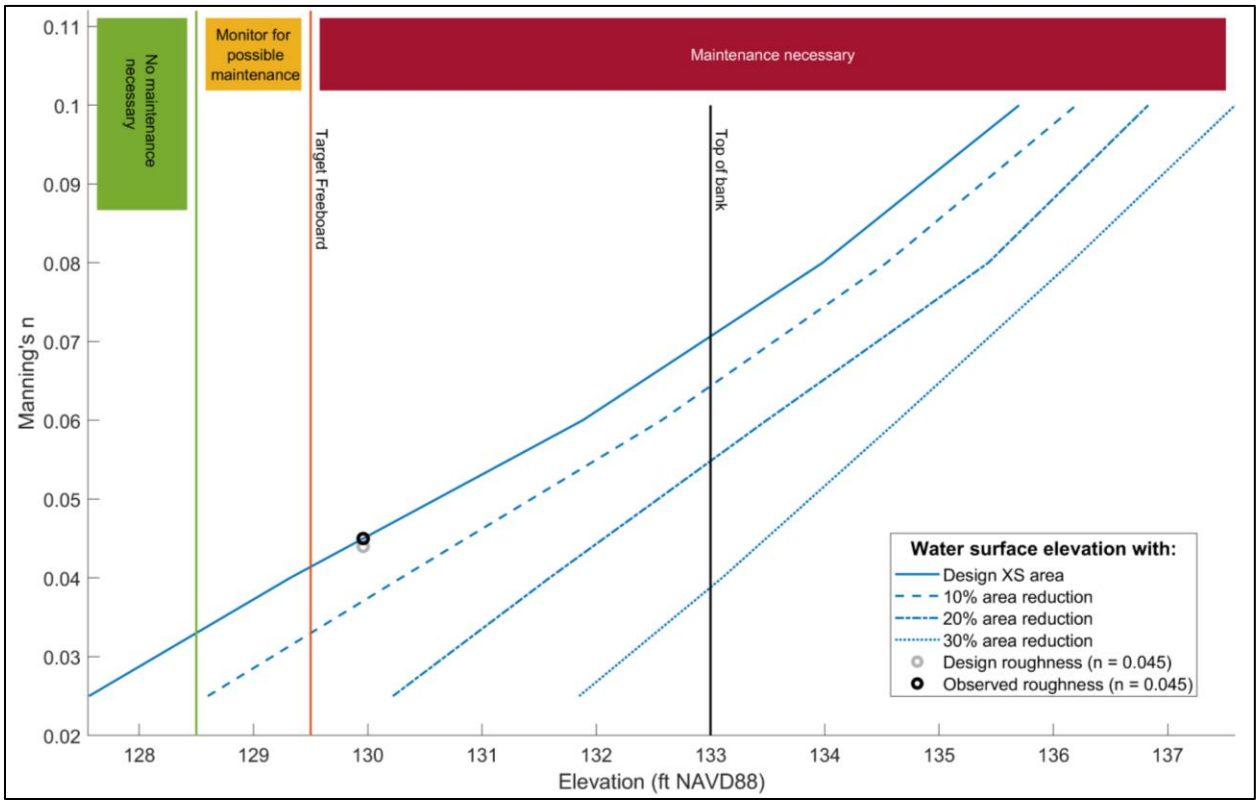


FIGURE 3-3c
Example Maintenance Guideline Nomograph for Lower Silver Creek – Reach 10

3.7.2 Scope and Content of Developed Maintenance Guidelines

In addition to the example nomographs shown in Figures 3-3a, 3-3b, and 3-3c, MGs provide quantifiable parameters that define channel conditions for flow conveyance at established LOS and identify tolerances or triggers to guide maintenance decision-making. The tolerances or triggers consider flow capacity while protecting habitat values as practicable.

The individual creek/reach MGs include the following information:

1. Physical description of the facility, including channel type, location of channel reaches, length of channel reaches, maintenance access locations, and ownership information.

2. Channel dimensions such as invert width, bank slope, and channel depth for each representative reach of the channel, based on as-built plans or record drawings (where available) for channels categorized as Modified.

3. Biotic habitats and the potential for special-status species to occur at the facility.

4. The established LOS, which is the design capacity (Q), and subsequent hydraulic analysis.

5. Target maintenance thresholds and roughness (vegetation and sediment) exceedance conditions. Qualitative and quantitative roughness objectives for each channel reach define the maximum allowable vegetation condition (e.g., vegetation type, density) and sediment accumulation for the given roughness that optimizes environmental values, including beneficial uses, for the reach (e.g., habitat, complexity, shade) while still providing the design flood flow conveyance.

6. Sediment objectives for each channel reach to estimate the level of deposition that can occur before the tolerance for loss of flow capacity is exceeded. Sediment depth is measured at permanent structures, such as bridge abutments or concrete walls, or at other markers, such as staff gages or sediment pins.

7. Maintenance history, general maintenance activities, and observed maintenance needs.

8. A list of other built assets at each facility/reach.

9. The information present in the MGs, specifically the target maintenance thresholds and roughness conditions objectives, serve as a tool for Valley Water to help identify facilities requiring potential corrective actions or facilities to be assessed during the development of future capital projects. These may appear in the MGs as:

    a. Channel reaches with insufficient capacity to convey the LOS flow under any roughness conditions;

    b. Channel reaches with hydraulic constrictions (e.g., undersized culverts, bridge abutments, railroad trestles, utility crossings, and other natural or human-caused obstructions) that could potentially cause backwater

conditions, increased water surface elevations, bank instabilities, or fish passage barriers; and

c. Channel reaches that are a priority for maintenance based on chronic problems and frequent maintenance due to sediment accumulation, flooding, excessive erosion, or other causes.

~~3.7.3 Workplan for Development of Maintenance Guidelines~~

Valley Water developed MGs that guide maintenance activities for many of its facilities. These MGs vary in age and, in some cases, need to be updated to reflect current MG approaches. Where MGs have not been developed, Valley Water relies on record drawings or uses existing channel reach dimensions and runs hydraulic models to assess whether flow conveyance-driven maintenance is warranted. Other factors beyond conveyance can also trigger maintenance, which may include, but are not necessarily limited to, providing mandated fire protection, removing invasive plant species, removing local blockages, or protecting public safety.

Under SMP-2, Valley Water updated existing MGs or developed new MGs for 40~~2~~ facilities. New and existing MGs will be updated or prepared using the information described in Section 3.7.2. Prioritization of MG development is based on the type of maintenance, the volume and frequency of work, the established LOS, and the anticipated impacts considering the sensitivity of resources.

Table 3-4~~3~~ and Figures 3-4 and 3-5 (figures provided at the end of the chapter) show facilities where Valley Water has developed MGs ~~and facilities where MGs are under development. Facilities are listed by watershed~~. MGs for any new capital facilities will be informed ~~developed~~through the CIP process.

TABLE 3-4
List of Creeks with MGs ~~(or planned)~~

Watershed[1]	Creek[2]	GIS Station (downstream extent)[3]	GIS Station (upstream extent)[3]	~~Status~~[4]
Lower Peninsula	Adobe	0+00	561+90	~~2015~~
	Stevens	0+00	670+00	~~2015~~
	Matadero	85+00	418+00	~~2017~~
	Permanente	1+50	506+00	~~2019~~
	San Francisquito	0+00	492+00	~~2019~~
	Barron	0+00	190+00	~~2022~~
West Valley	Calabazas	0+00	679+00	~~2015~~
	San Tomas Aquino	0+00	824+00	~~2017~~
	Saratoga	0+00	523+50	~~2019~~
	Regnart	0+00	139+75	~~2019~~
	Wildcat	0+00	194+80	~~2022~~
	Rodeo	0+00	113+98	~~2022~~
	~~Sunnyvale East Channel~~	~~0+00~~	~~339+87~~	~~2023~~
Guadalupe	Ross	0+00	324+72	~~2014~~
	Alamitos	0+00	405+96	~~2016~~
	Golf	0+00	90+00	~~2016~~
	Los Gatos	0+00	420+00	~~2017~~
	Randol	0+00	38+00	~~2019~~
	Canoas	0+00	390+34	~~2023~~
	Greystone	0+00	81+89	~~2023~~
	Guadalupe River	0+00	1074+15	~~2023~~
Coyote	Upper Silver	0+00	393+87	~~2015~~
	Lower Penitencia	46+00	217+00	~~2017~~
	Berryessa	205+00	301+50	~~2017~~
	Lower Silver	0+00	317+20	~~2019~~
	Thompson	0+00	184+00	~~2019~~
	Coyote	305+80	714+00	~~2019~~
	Calera	0+00	75+17	~~2023~~
	Sierra	0+00	110+68	~~2023~~
	Los Coches	0+00	63+00	~~2023~~
	Upper Penitencia	0+00	219+06	~~2023~~

Watershed[1]	Creek[2]	GIS Station (downstream extent)[3]	GIS Station (upstream extent)[3]	~~Status~~[4]
Uvas/Llagas (Pajaro)	Lions	0+00	187+94	~~2015~~
	Uvas-Carnadero	367+50	465+00	~~2016~~
	Princevalle Storm Drain	0+00	95+34	~~2016~~
	Llagas	0+00	382+00	~~2017~~
	West Branch Llagas	0+00	220+00	~~2017~~
	Jones	0+00	256+00	~~2018~~
	Madrone Channel	0+00	217+50	~~2019~~
	North Morey Channel	0+00	13+48	~~2023~~
	South Morey Channel	0+00	33+13	~~2023~~
	Edmundson	0+00	43+39	~~2023~~

Note: ~~Shaded cells indicate creeks for which MGs have been prepared (as of March 2022)~~ The MGs for the above creeks were updated in 2023 and are being utilized as working documents.

[1] MGs are developed for reaches of creek in which there is a defined LOS and where Valley Water has the authority to operate.

[2] Watersheds are organized geographically, as follows: Lower Peninsula, West Valley, Guadalupe, Coyote, and Uvas/Llagas (Pajaro).

[3] GIS stationing may be adjusted as LOS are defined.

[4] ~~Status indicates year in which MG was prepared and/or is projected to be completed.~~

3.8 PROJECTIONS

To determine SMP-3 work projections, Valley Water compared past projections for SMP-1 and SMP-2 to the actual amount of work that was conducted under the SMPs. Valley Water projects that approximately 58 linear miles of sediment removal would be conducted under SMP-3, similar to the scale of work that was projected for SMP-1. For bank repair projects, Valley Water projects that these activities will result in approximately 2 acres of permanent impacts and up to 6 acres of temporary impacts. Valley Water projects that approximately 140 miles of in-stream vegetation removal work by hand and mechanical equipment would be conducted and approximately 227 miles of aquatic herbicide application activities would be conducted between 2027 and 2036. Table 3-5 compares SMP-3 work projections against projections for SMP-1 and SMP-2 and the actual amount of work completed under SMP-1 and SMP-2. SMP-3 work projections for in-stream vegetation removal, sediment removal, and aquatic herbicide application activities are depicted in Figures 3-6 through 3-8, provided at the end of this chapter.

TABLE 3-5
Summary of Projected Activities and Actual Work Completed for SMP-1, SMP-2, and SMP-3

Primary SMP Activities	SMP-1 Projected Activities (2002-2012) (length, miles)	SMP-1 Actual Work Completed (2002-2009) (length, miles)	SMP-2 Projected Activities (2012-2022) (length, miles)	SMP-2 Actual Work Completed (2014-2020) (length, miles)	SMP-3 Projected Activities (2027-2036) (length, miles)
Vegetation Management – Channel Removal by Hand and Mechanized Equipment	60	46.74	150.9	76.4	140.7
Vegetation Management – Aquatic Herbicide Application*	183	172.86	846.9	147.6	227
Sediment Removal	58	32.34	42.8	33.4	58
Bank Stabilization	N/A	7.48	N/A	1.7	2 acres of permanent impacts

* The mileage of herbicide application is based on Valley Water's herbicide application routes for both aquatic herbicides and post emergent herbicides. Valley Water primarily conducts localized spot spraying within these routes, not necessarily continuous spraying along the entire length of the route.

These work projections will be used to conduct the environmental impact analysis and thereby determine potential impacts, necessary BMPs, and mitigation measures. A Subsequent EIR will be prepared to evaluate SMP-3 activities. Maintenance activities are permitted throughout the SMP area as long as they do not result in significant environmental effects substantially different than those evaluated for the SMP as a whole (as informed by the projections used for the environmental analysis).

3.9 PROGRAM LIMITS

Because the SMP is managed programmatically, each work activity has a range of project-specific limitations. The SMP protects natural resources by adhering to Program and project limits. Work areas are managed for the entire SMP area to ensure that they do not exceed the maximum work covered by the SMP, Subsequent EIR, and regulatory permits.

SMP limits include the following:

- Overall (10-year) acreage limitations on work activities;
- Annual acreage limitations on work activities;
- Limits on the extent of work in a particular area (e.g., extent of canopy removal, linear feet subject to maintenance based on channel type);
- Numbers of non-hazard trees 6-12 inches dbh and non-hazard trees greater than 12 inches dbh that can be removed (annually and over the 10-year lifetime of the SMP); and
- Average annual and 10-year limits on the amount of herbicides and pesticides that can be used.

Program limits for each work activity are described in Chapters 4-9.

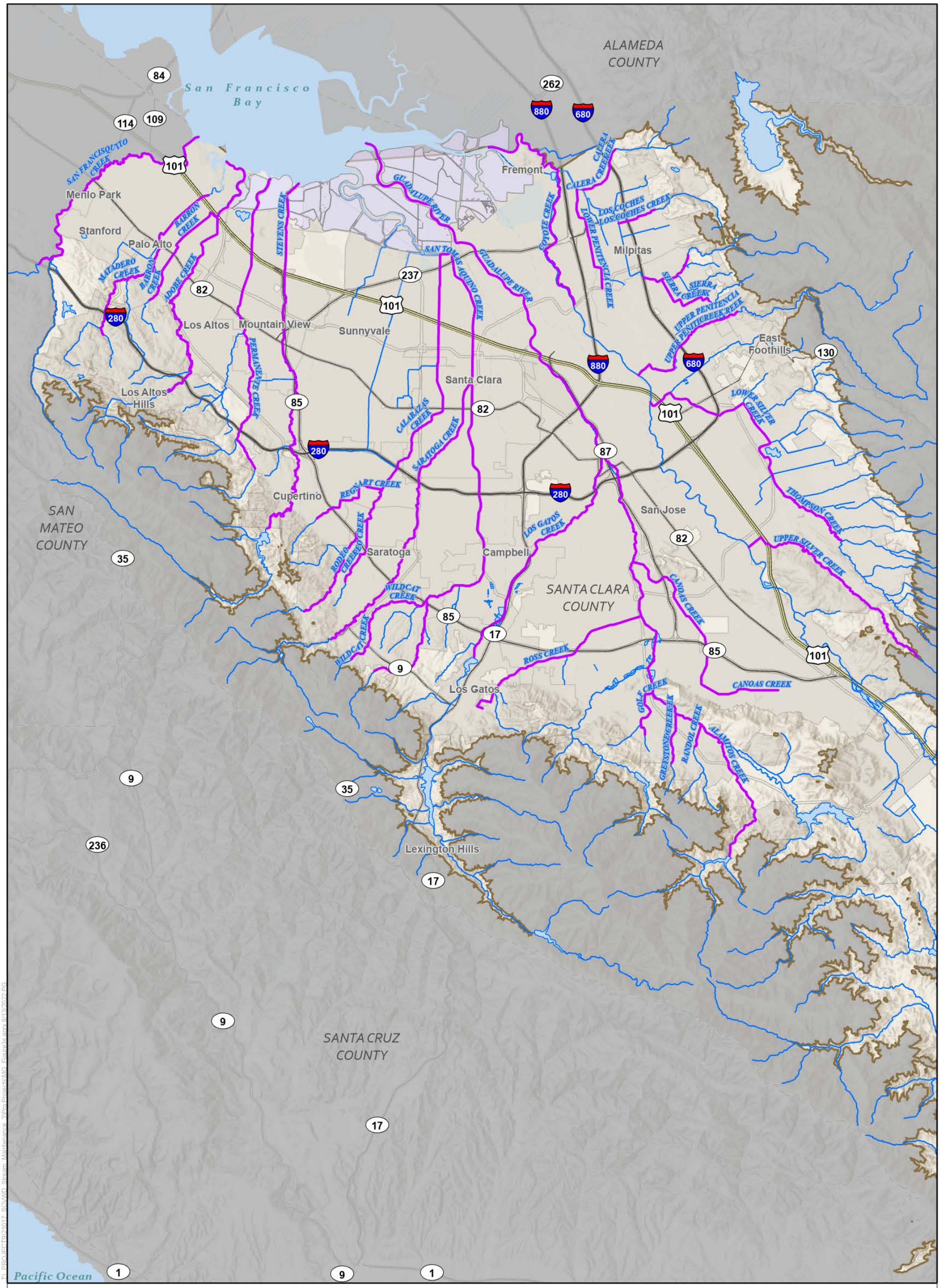


Figure 3-4
Maintenance Guideline Development
for North County Channels

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Santa Clara Valley Water District
SMP3 Manual

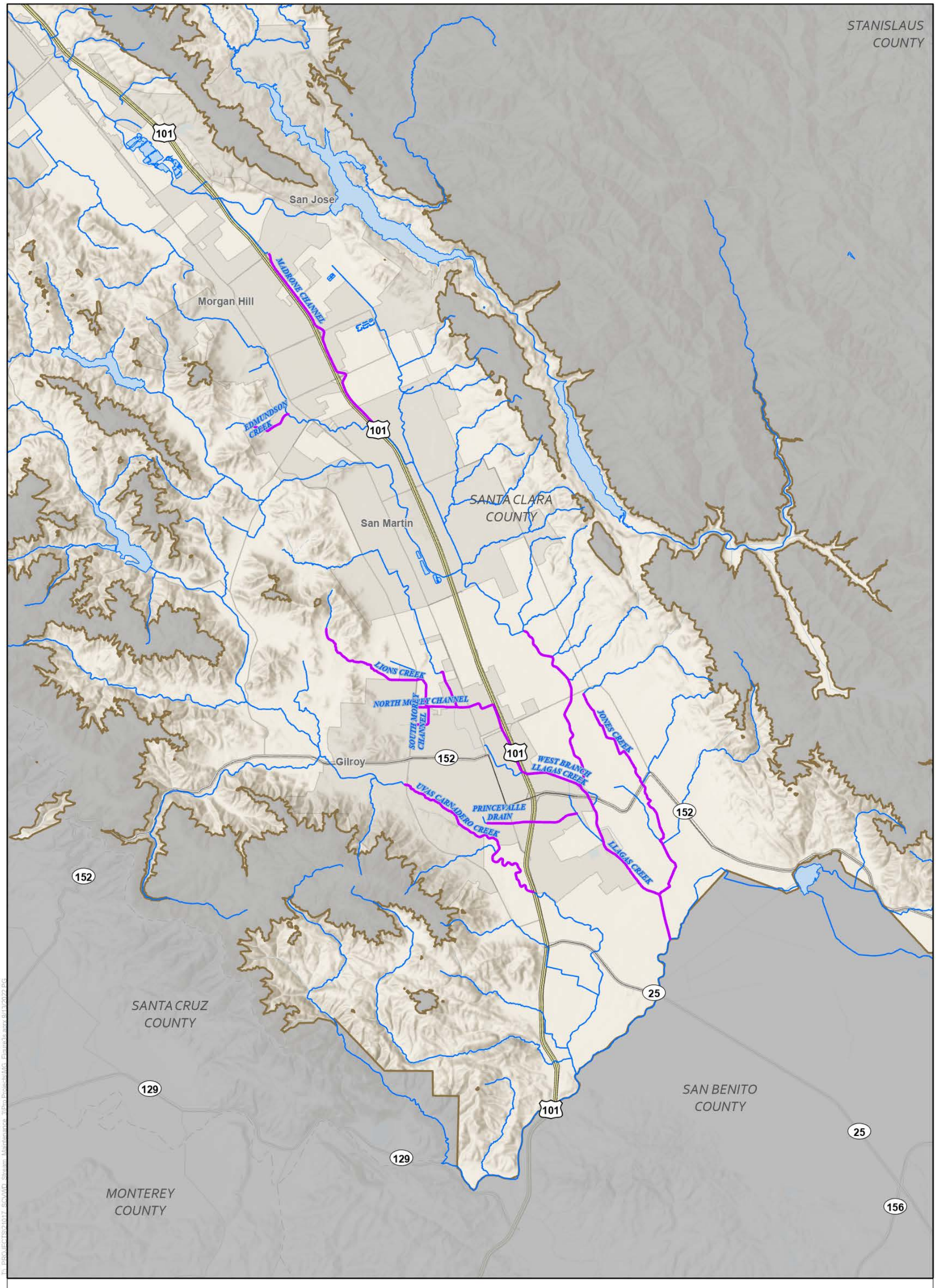

Figure 3-5
Maintenance Guideline Development for South County Channels

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Santa Clara Valley Water District
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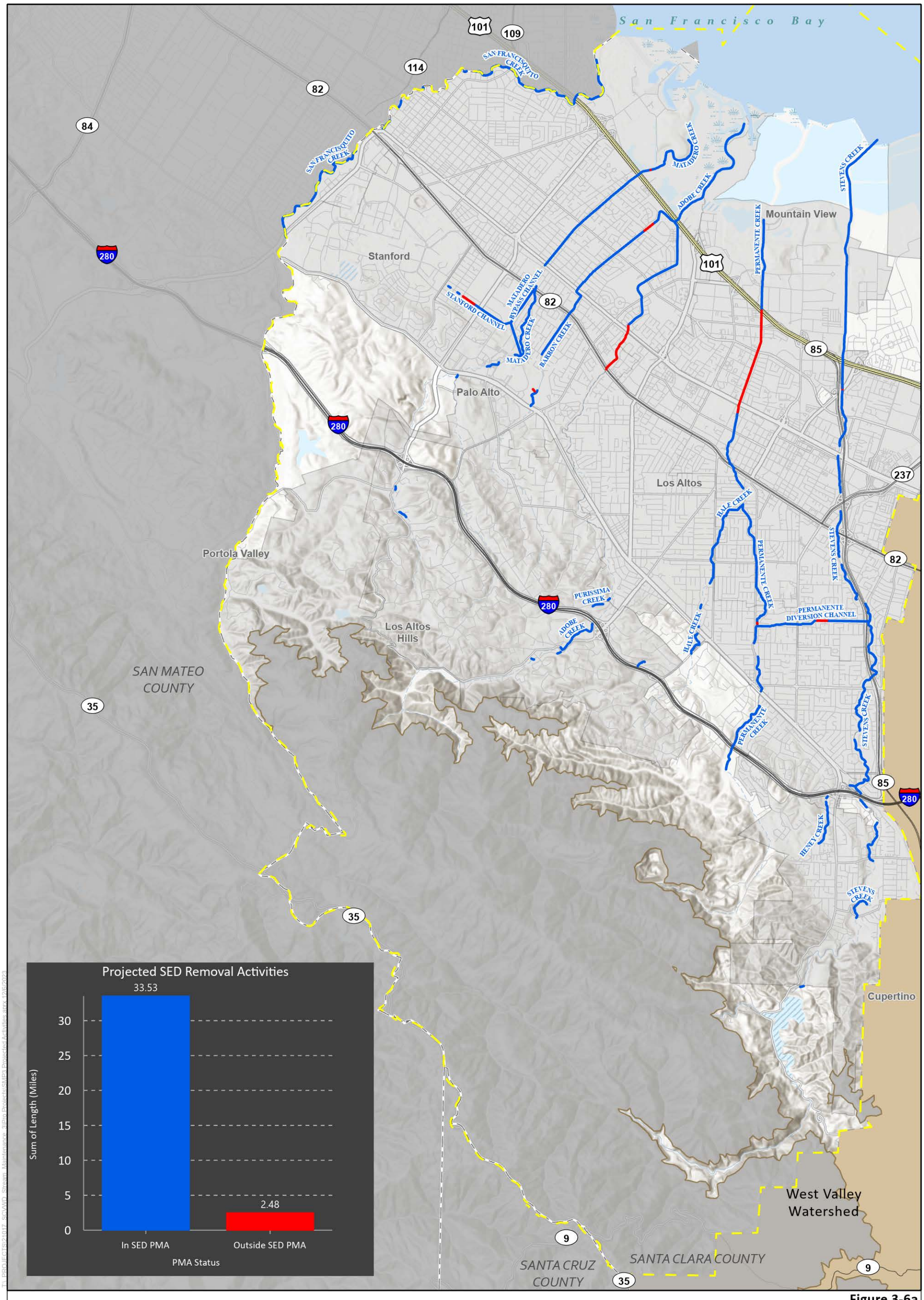

Figure 3-6a
Lower Peninsula Watershed
Projected Sediment (SED)
Removal Activities

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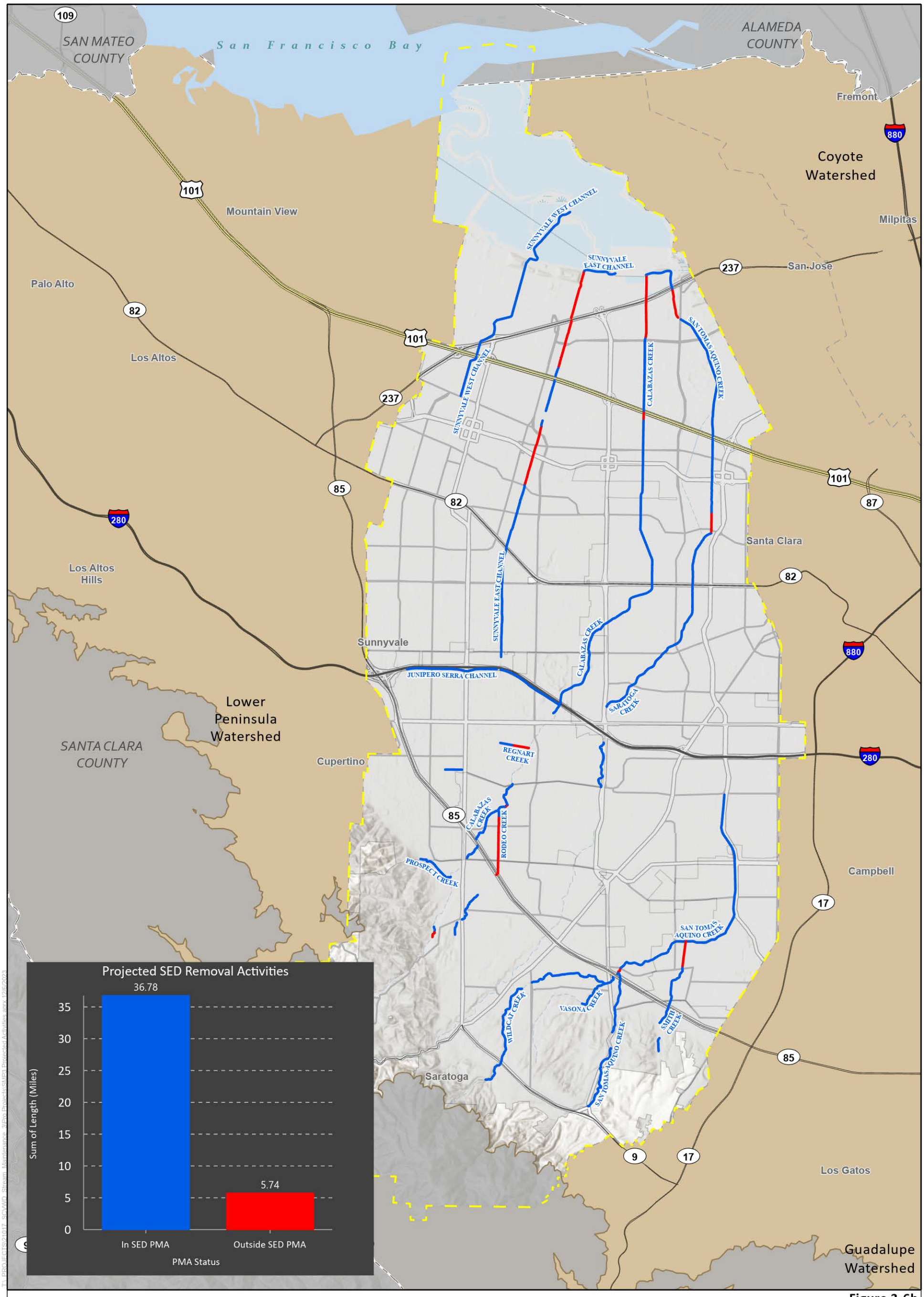
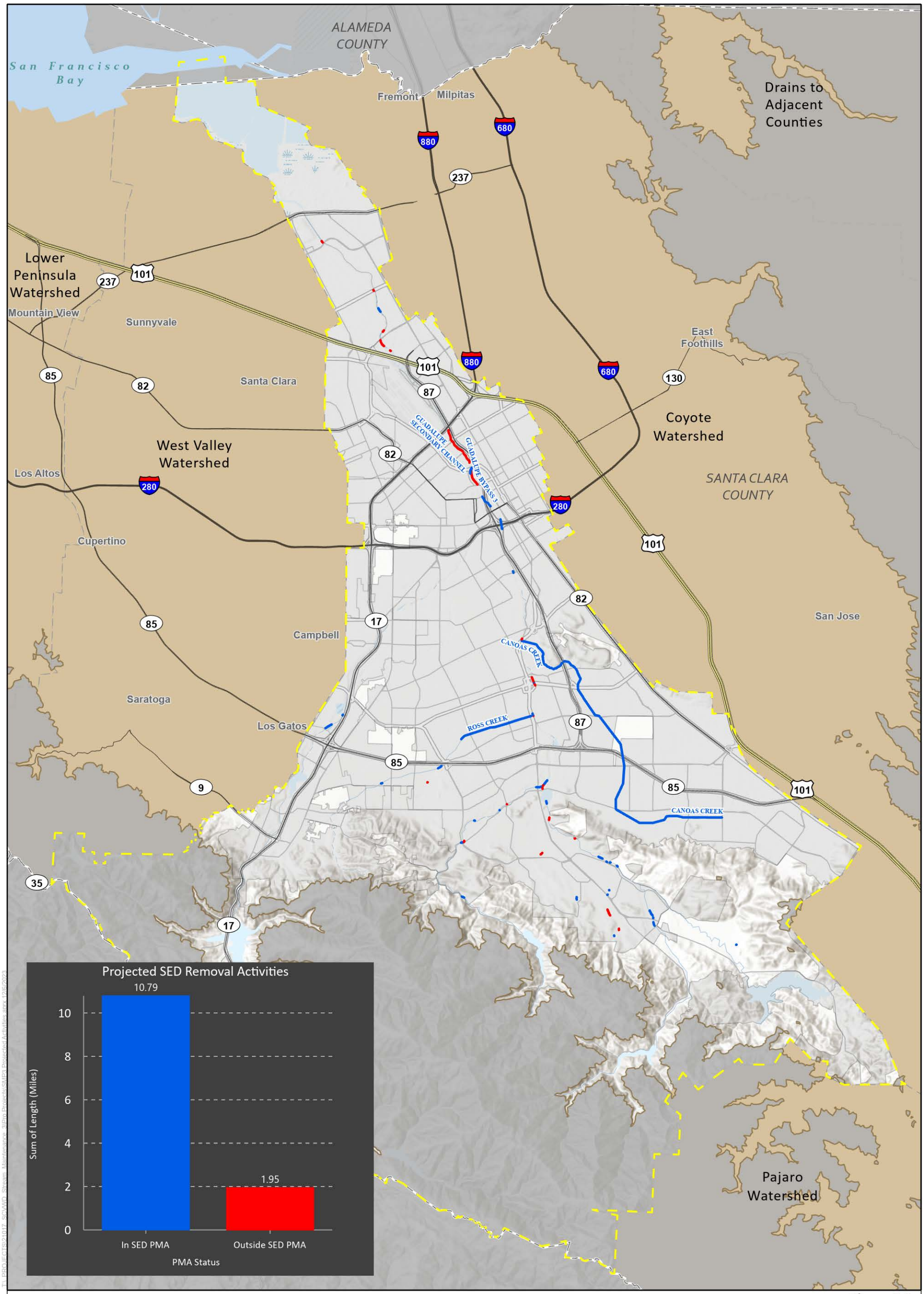


Figure 3-6b
West Valley Watershed
Projected Sediment (SED)
Removal Activities

MONTROSE ENVIRONMENTAL



N

0 3 Miles

Activity by PMA Status

- Projected SED Removal Activities in Permanently Mitigated Areas (PMA)
- Projected SED Removal Activities Outside of PMA

Watershed

- Guadalupe
- Adjacent Watersheds
- Upper Elevation Area Outside Program Area
- Cities
- Bay Waters

Major Roads

- Interstate Highway
- State Highway and Route
- US Highway
- County Boundary

Figure 3-6c
Guadalupe Watershed
Projected Sediment (SED)
Removal Activities

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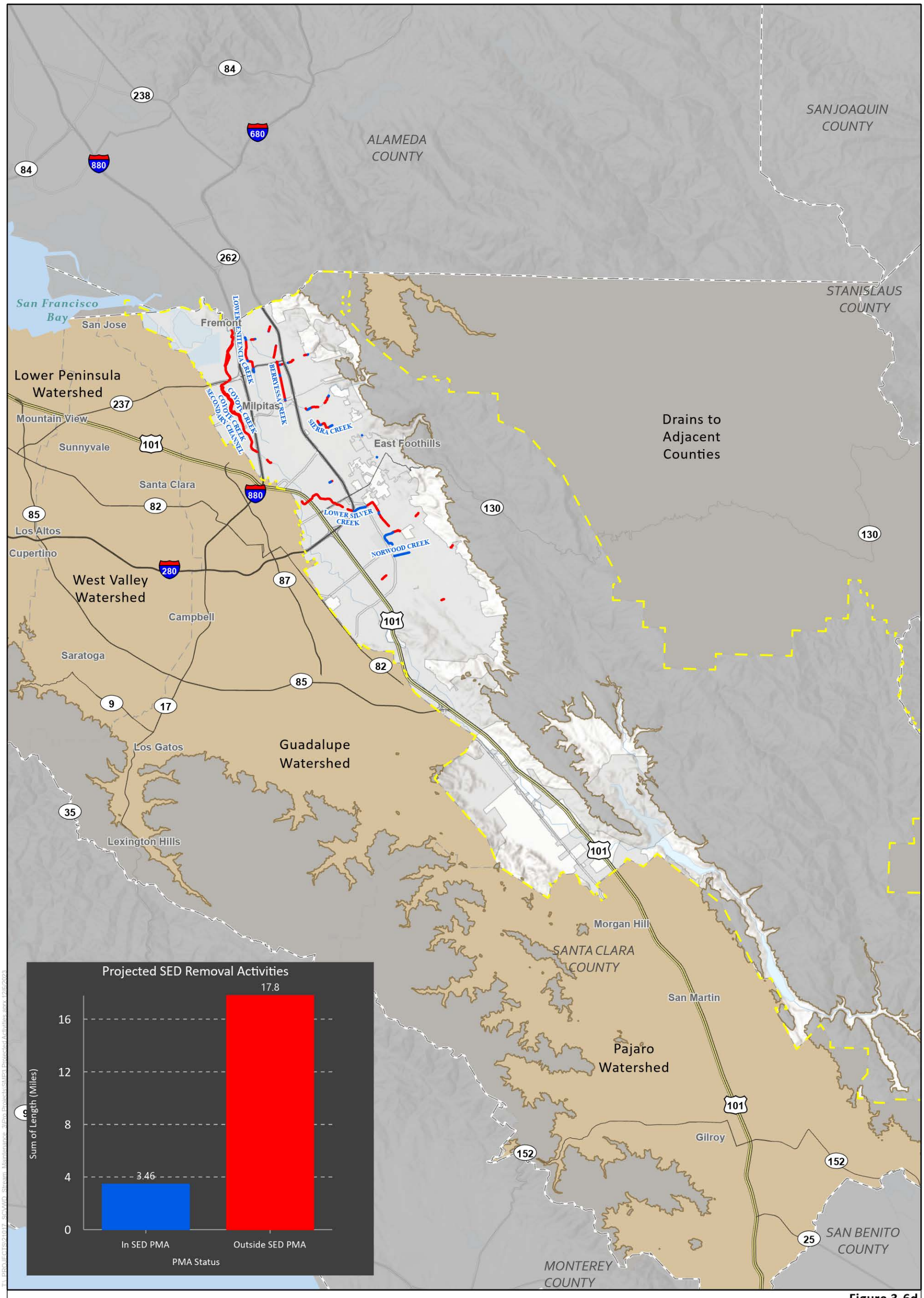
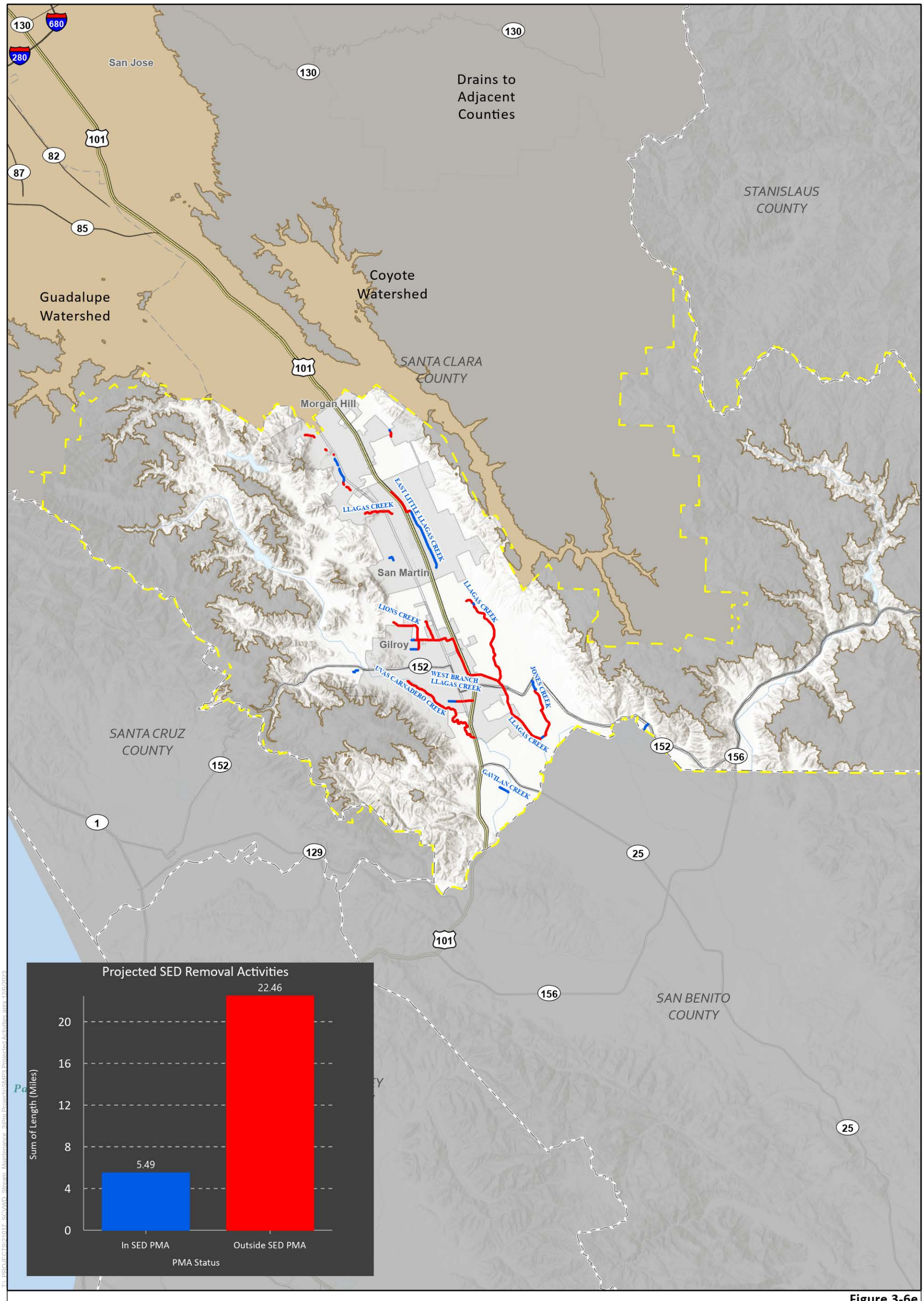


Figure 3-6d
Coyote Watershed
Projected Sediment (SED)
Removal Activities

MONTROSE ENVIRONMENTAL



N

0 5 Miles

Activity by PMA Status
- Projected SED Removal Activities in Permanently Mitigated Areas (PMA)
- Projected SED Removal Activities Outside of PMA

Watershed
- Pajaro
- Adjacent Watersheds
- Upper Elevation Area Outside Program Area
- Cities
- Bay Waters

Major Roads
- Interstate Highway
- State Highway and Route
- US Highway
- County Boundary

Figure 3-6e
Pajaro Watershed
Projected Sediment (SED) Removal Activities

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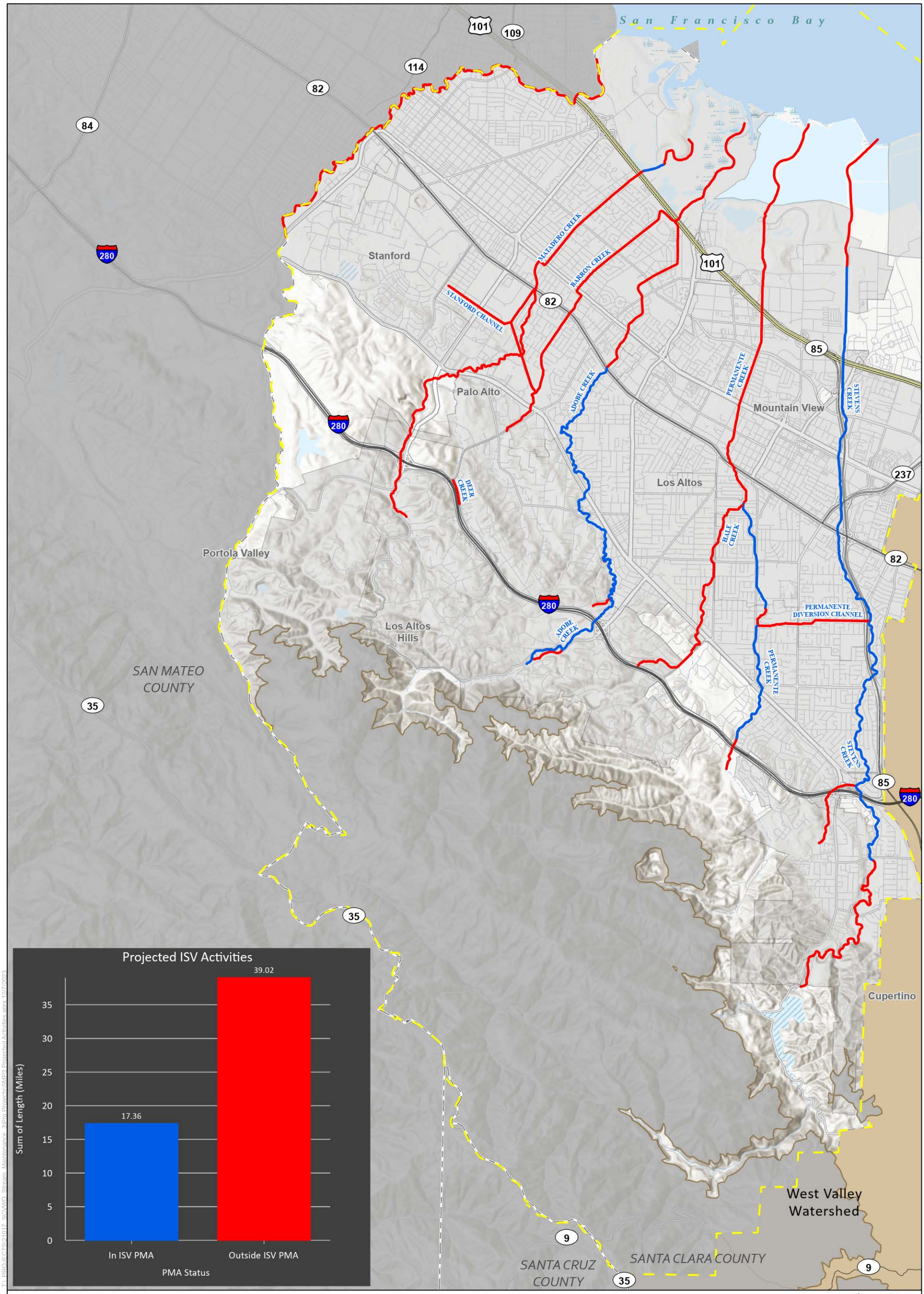

Figure 3-7a
Lower Peninsula Watershed
Projected
In Stream Vegetation
(ISV) Activities

MONTROSE ENVIRONMENTAL

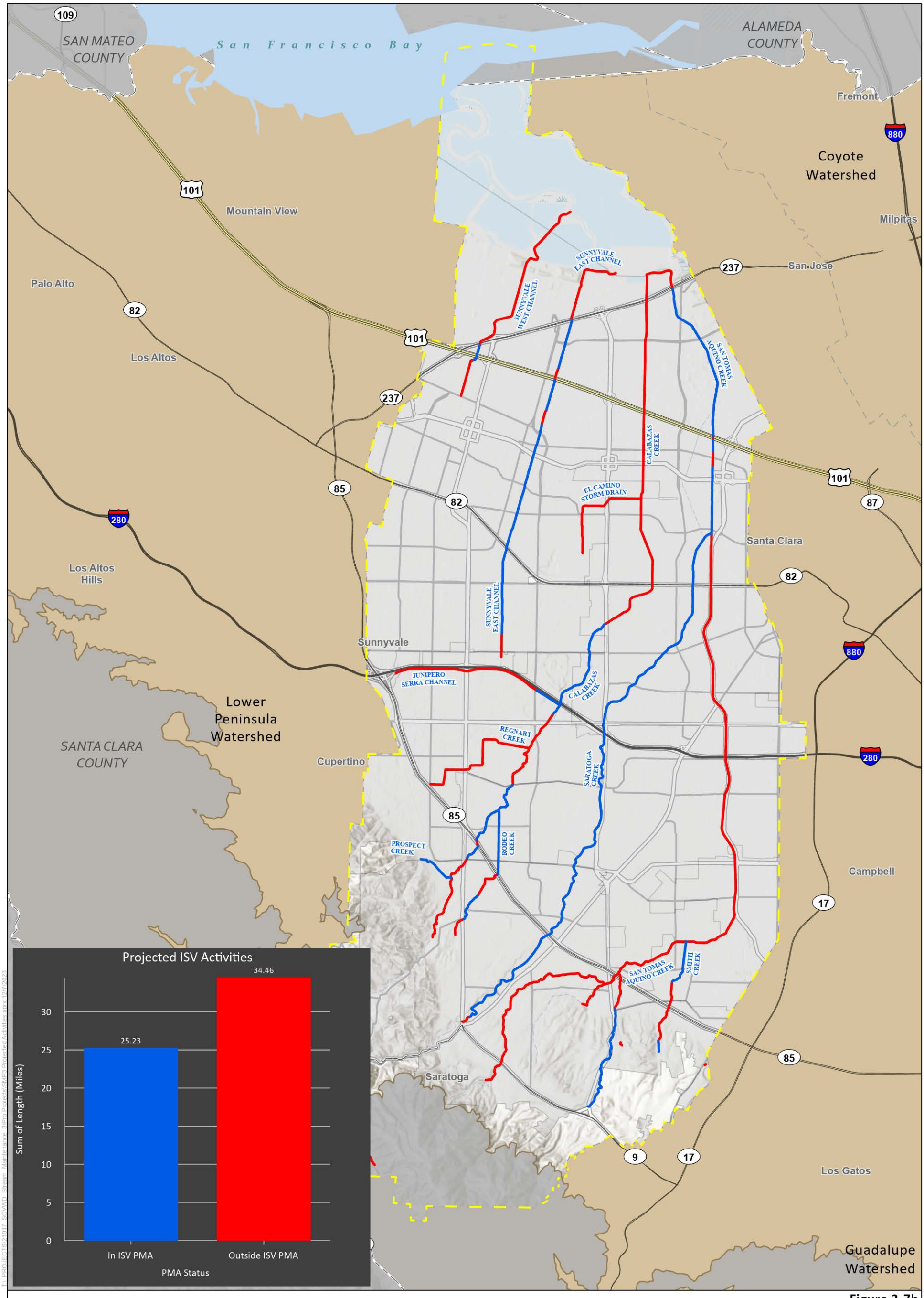

Figure 3-7b
West Valley Watershed
Projected
In Stream Vegetation
(ISV) Activities

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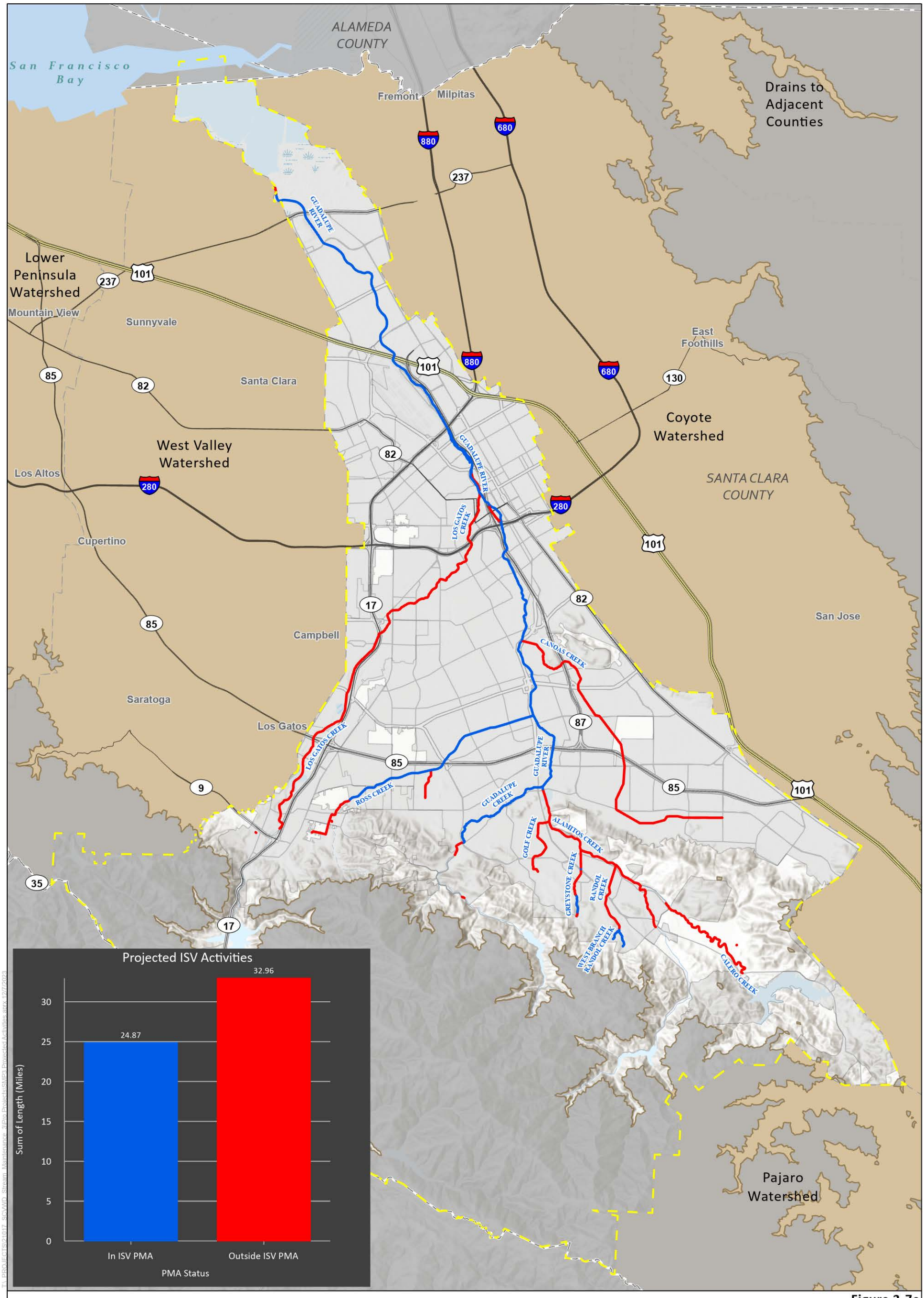

Figure 3-7c
Guadalupe Watershed
Projected
In Stream Vegetation
(ISV) Activities

MONTROSE ENVIRONMENTAL

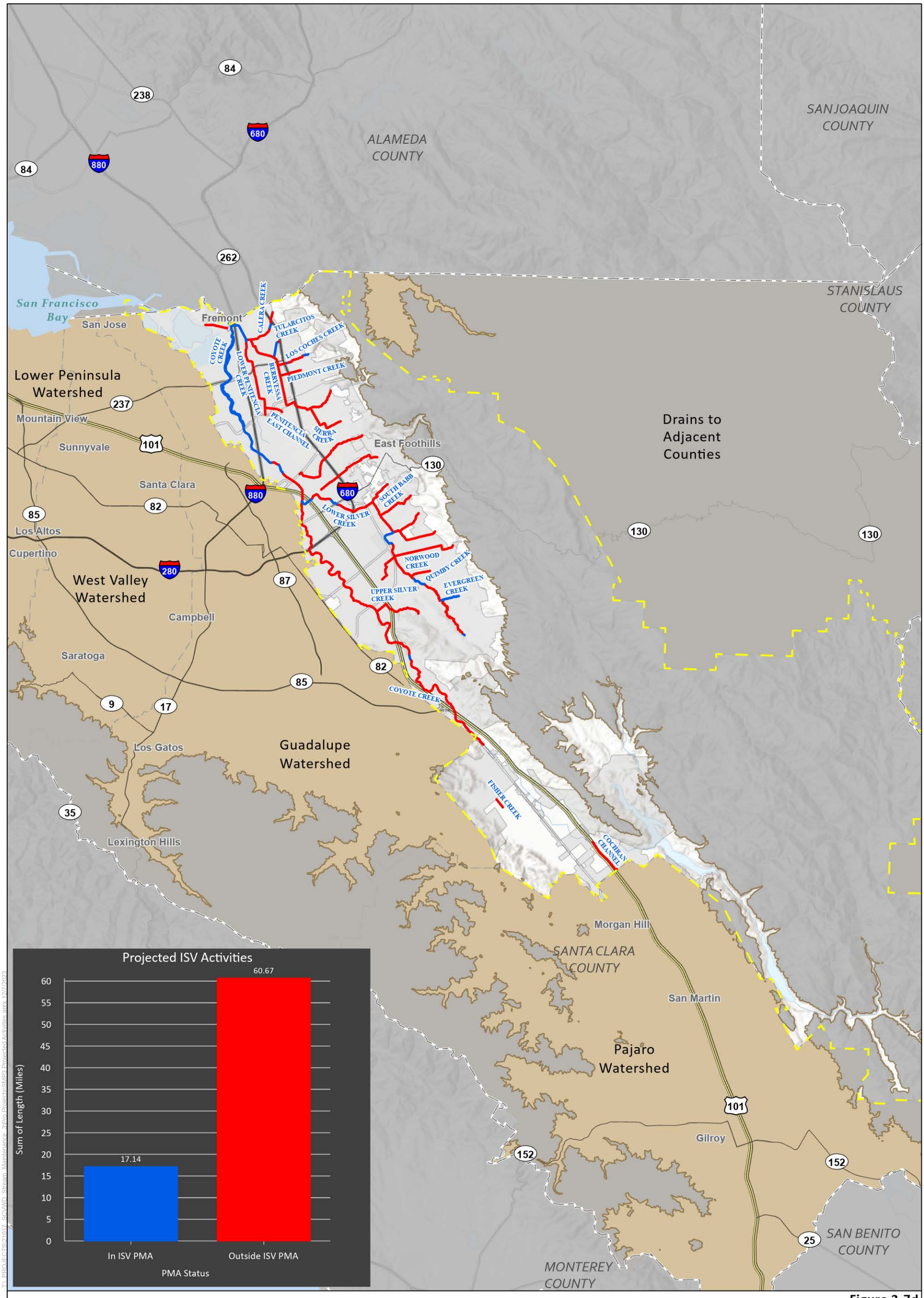

Figure 3-7d
Coyote Watershed
Projected
In Stream Vegetation
(ISV) Activities

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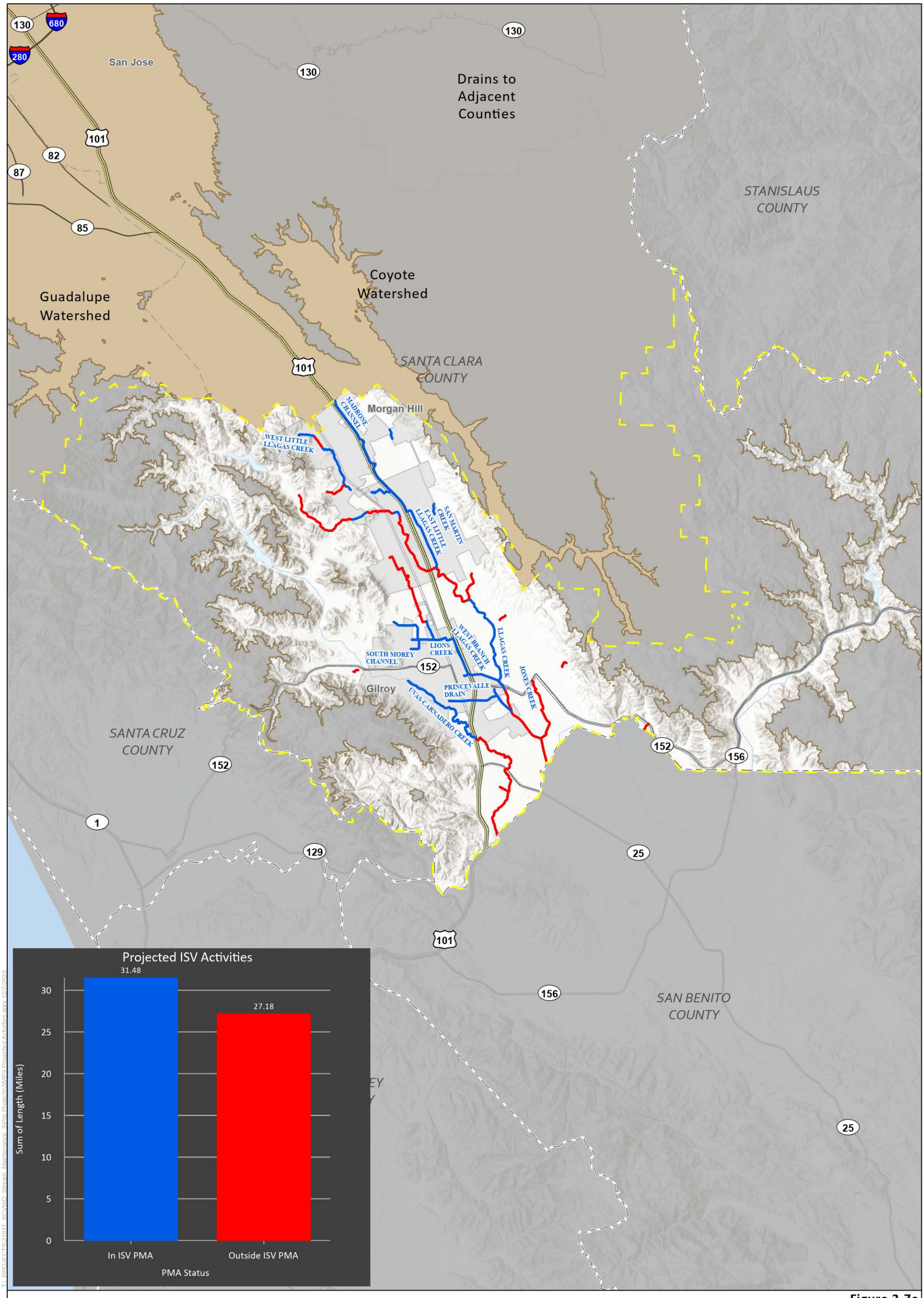

N

0 5 Miles

Activity by PMA Status

- Projected ISV Activities in Permanently Mitigated Area (PMA)
- Projected ISV Activities Outside PMA

Watershed

- Pajaro
- Adjacent Watersheds
- Upper Elevation Area Outside Program Area
- Cities
- Bay Waters

Major Roads

- Interstate Highway
- State Highway and Route
- US Highway
- County Boundary

Figure 3-7e
Pajaro Watershed
Projected
In Stream Vegetation
(ISV) Activities

MONTROSE ENVIRONMENTAL

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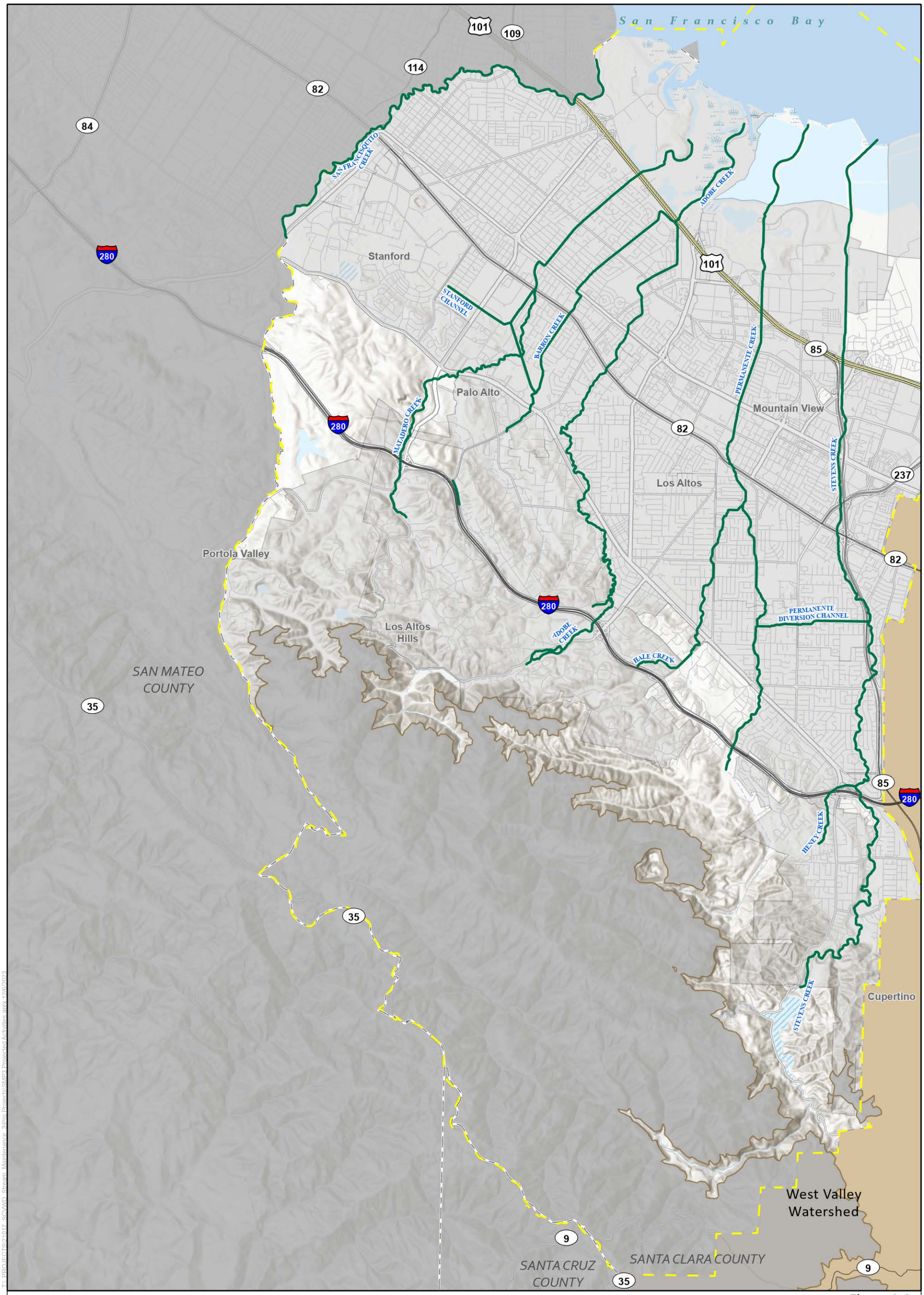

Figure 3-8a
Lower Peninsula Watershed
Projected Aquatic
Herbicide Activities

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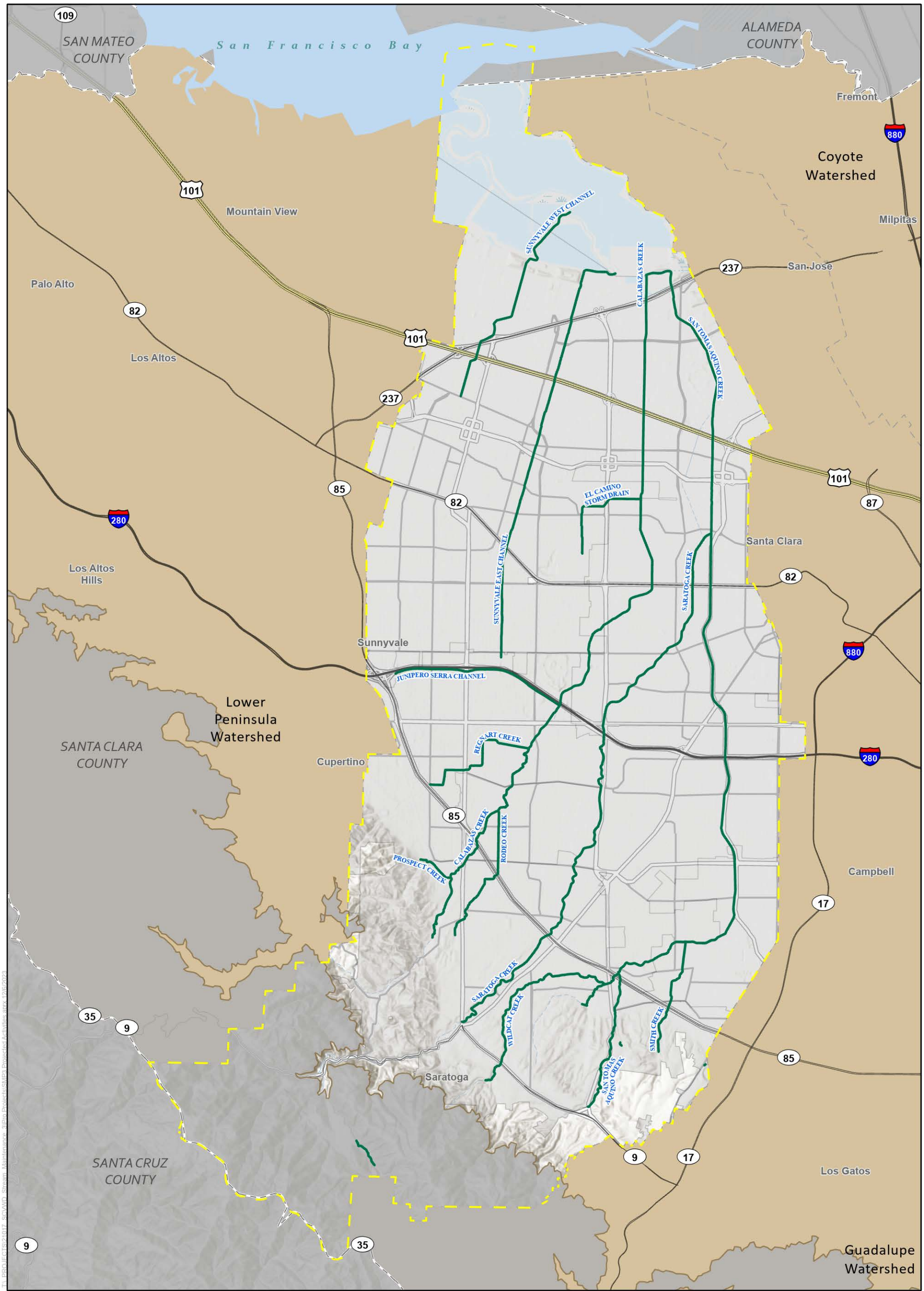

Figure 3-8b
West Valley Watershed
Projected Aquatic
Herbicide Activities

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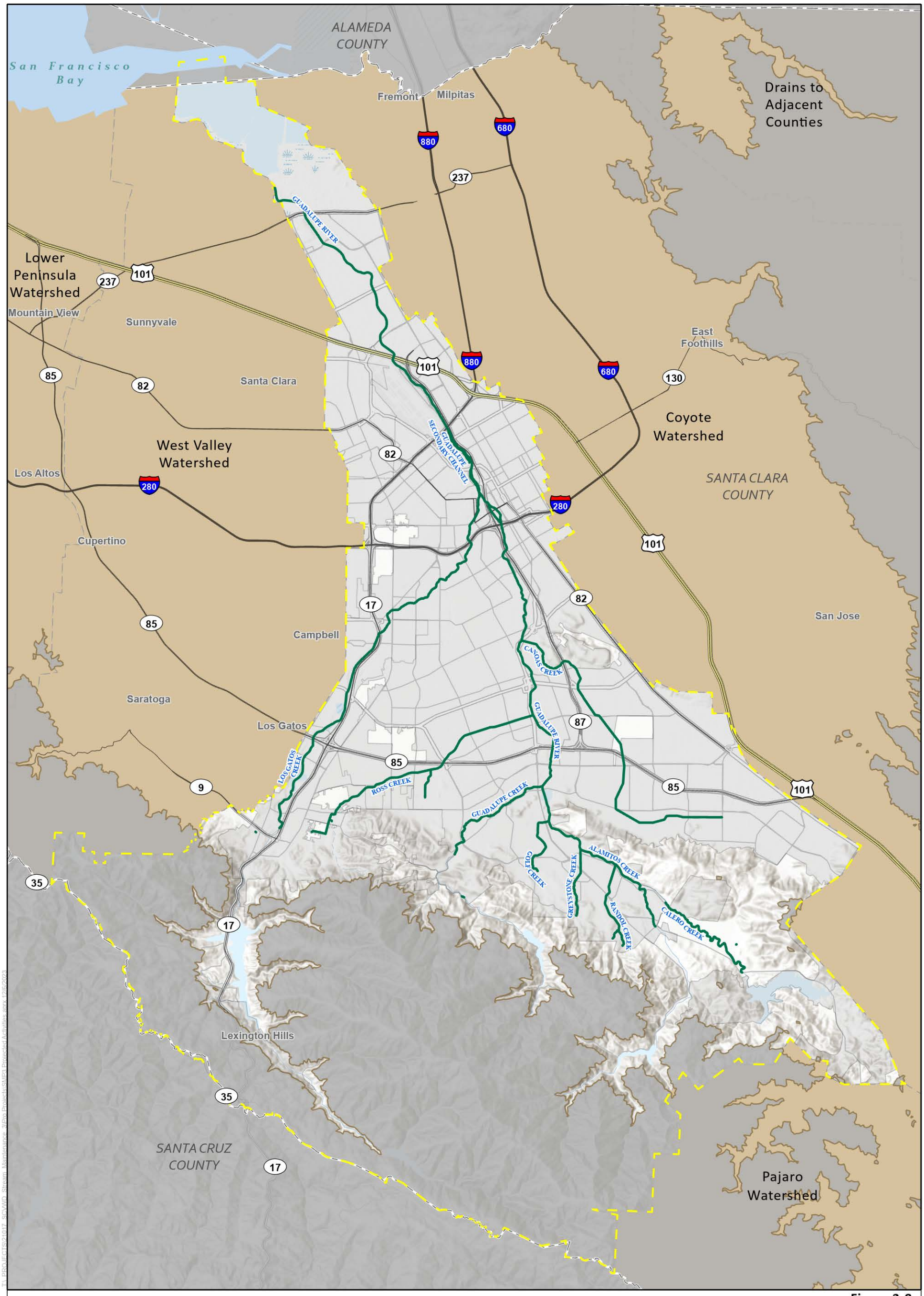

Figure 3-8c
Guadalupe Watershed
Projected Aquatic
Herbicide Activities

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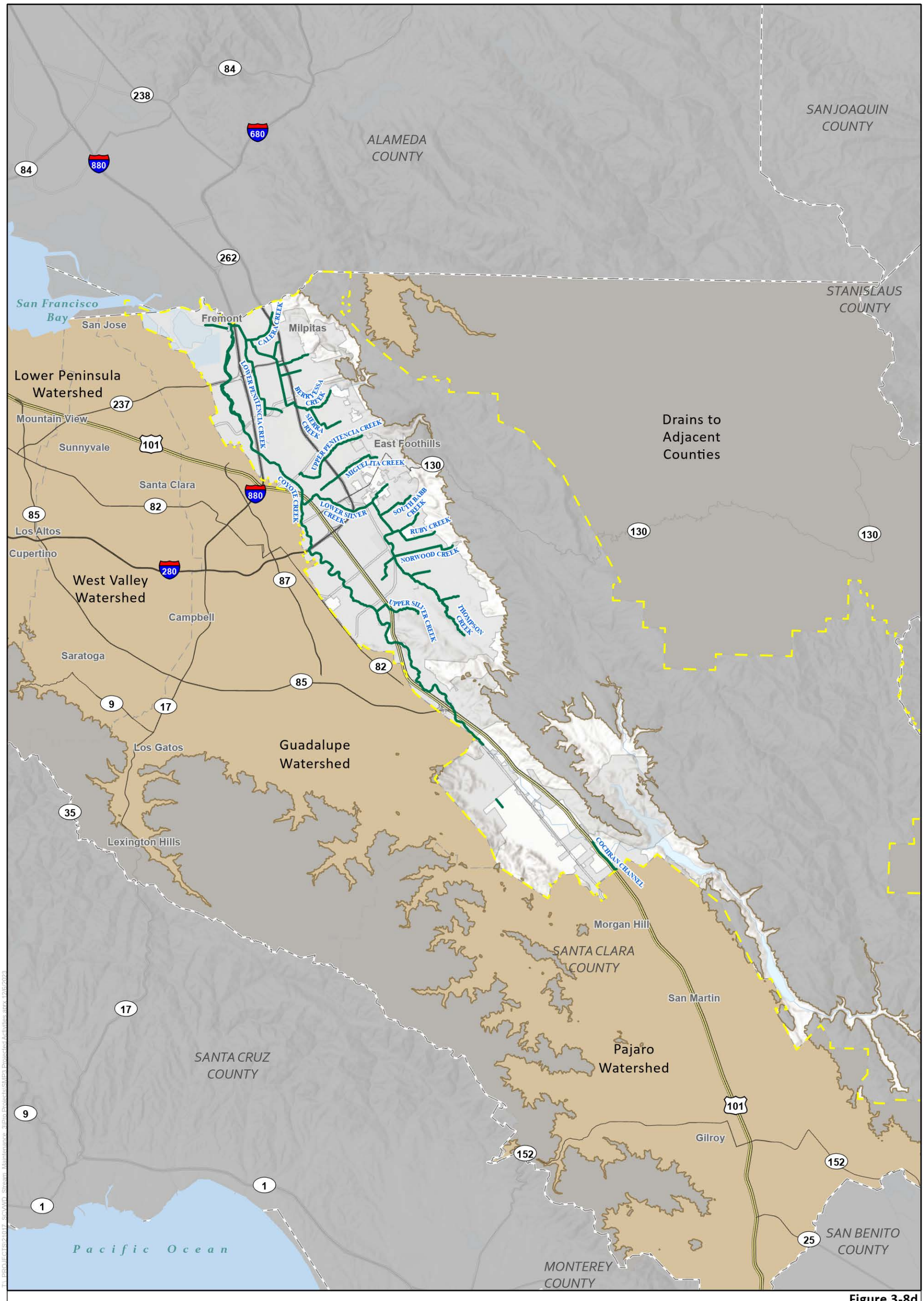

Figure 3-8d
Coyote Watershed
Projected Aquatic
Herbicide Activities

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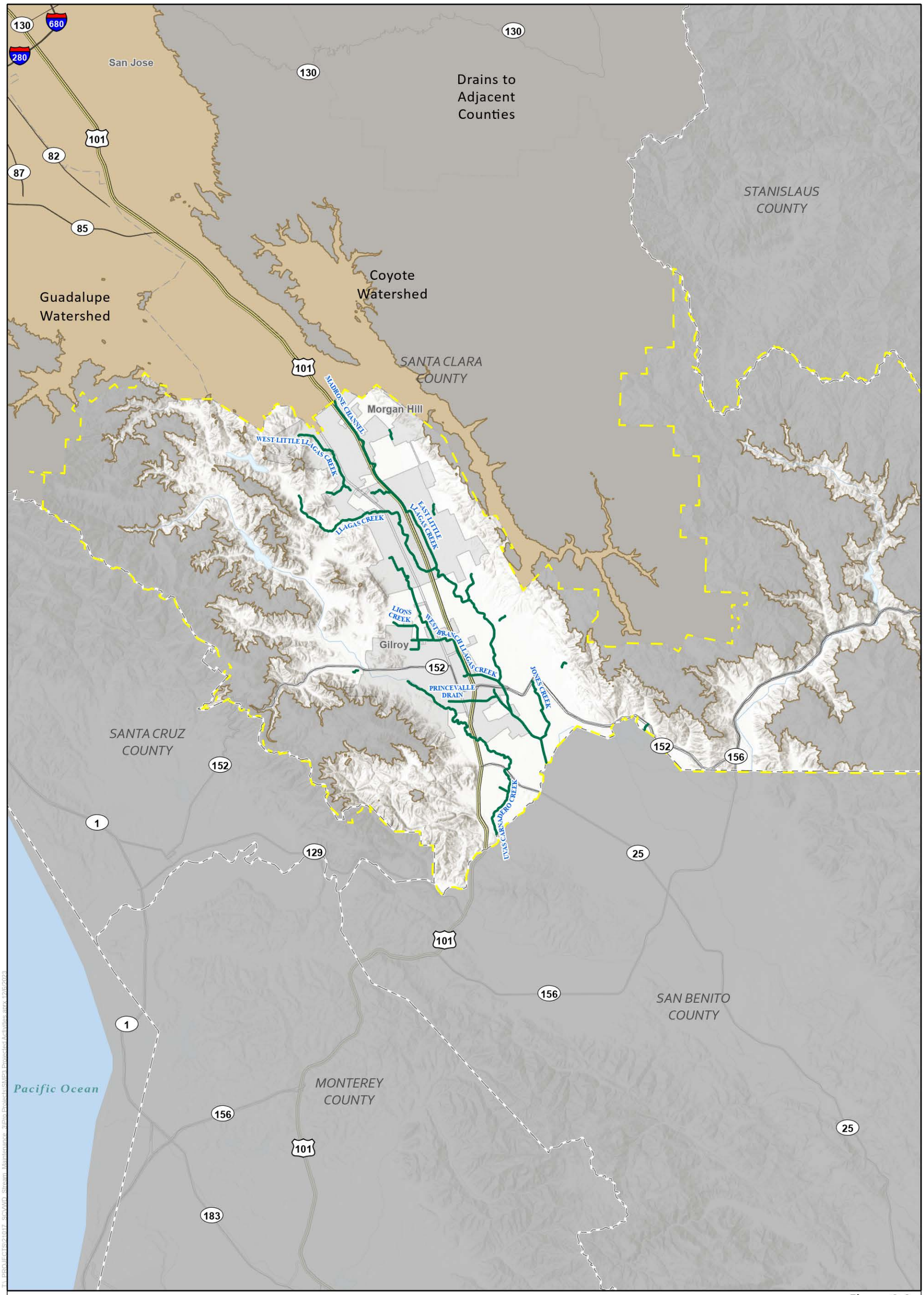

Figure 3-8e
Pajaro Watershed
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CHAPTER 4. VEGETATION MANAGEMENT

4.1 INTRODUCTION

Vegetation management is conducted to maintain the hydraulic and operational functions of Valley Water's flood protection system channels; maintain access to Valley Water facilities; maintain the structural integrity of Valley Water flood protection facilities and lands; maintain defensible space around Valley Water's facilities and reduce fire fuel loads and wildfire risk; and improve overall public safety. In addition, vegetation management is conducted at restoration sites to promote overall ecological health improvements in the Program area through invasive plant management, pruning, and other vegetation management activities. There are also times when Valley Water conducts vegetation management activities to improve a site's ecologic health and function as habitat for sensitive species. In such cases, where Valley Water is purposefully improving a site's ecologic and habitat conditions, compensatory mitigation would not be required.

A variety of vegetation management activities are anticipated to be undertaken during the SMP-3 period (2027-2036). Valley Water staff inspect channels on a regular basis to identify potentially problematic vegetation growth, as described in the sub-sections of Section 4.2, and to prioritize vegetation management activities each year.

4.2 PURPOSES AND OBJECTIVES OF VEGETATION MANAGEMENT ACTIVITIES

The following sub-sections describe the primary purposes and objectives for conducting vegetation management activities, as well as maintenance trigger conditions for each work category.

4.2.1 Flow Conveyance

Various vegetation management activities are conducted to achieve identified flow conveyance objectives, including instream vegetation management to reduce roughness (Manning's *n* value). Pruning and removal of herbaceous, invasive, emergent, or woody vegetation less than 6 inches diameter at breast height (dbh) are routinely conducted in channels to ensure adequate conveyance capacity and to reduce the risk of flooding. This work is also typically needed immediately upstream and downstream of bridges to prevent debris accumulation at bridge crossings. Herbicides may also be applied where the presence of herbaceous, invasive, emergent, or small woody vegetation (typically saplings less than 2 inches dbh) conflicts with the Maintenance Guidelines (MGs) and standards for a facility.

Tree removal may be necessary to re-establish design flow conveyance, such as when a tree on the bank has fallen into the stream or moved in such a way that the tree's new orientation impedes flow or causes debris blockages. These situations result in an increased flood risk. Fallen or leaning trees can also divert streamflow into the opposite bank, increasing erosion and increased flood risk. Under this chapter, live trees that are leaning but still standing on their own are treated as vegetation. Trees that have fallen and are no longer standing on their own, including trees that have fallen and are being supported by leaning against other trees or topographic features, and trees that have

fallen and are supported by a “kickstand” of their lateral branches, are considered to be debris. For discussion regarding the removal of fallen trees as debris (those that are less than 12 inches diameter or otherwise do not meet the criteria to be considered large woody debris), refer to Chapter 8, *Minor Maintenance Activities;* for discussion regarding removal of fallen trees greater than 12 inches diameter that meet the criteria to be considered large woody debris, refer to Chapter 9, *Downed Tree Management*.

Maintenance Triggers for Flow Conveyance

In-channel vegetation management activities are triggered when inspection of a facility indicates a deficiency as defined by any of the following conditions:

- Visual observation (verified by quantitative estimate or comparison to Maintenance Guidelines reference documents) indicates that vegetation exceeds allowable tolerances identified in the MGs; or

- Visual observation (verified by quantitative estimate or comparison to Maintenance Guidelines reference documents), compared with the design or as--built channel roughness condition, indicates the need to prune or remove vegetation or trees; or

- Visual observation (verified by quantitative estimate or comparison to Maintenance Guidelines reference documents), compared to the vegetation condition that provides a balance between flow capacity and habitat function and value in the channel, indicates that vegetation must be pruned, controlled, or removed to restore that balance.

After Valley Water completes its annual channel inspections, staff analyze inspection results by assessing channel capacity and conveyance conditions to identify and confirm where vegetation management is required. Staff may collect additional site measurements and information, including cross-section surveys, photo documentation, and vegetation inventories. These measurements and information are compiled to characterize the current condition, particularly the current channel roughness (Manning’s *n* value). Staff compare the current condition to available MGs for that location. If MGs are not available for a location, staff rely on record drawings or use existing channel reach dimensions and hydraulic models to evaluate the maintenance need. The collected information is compared to the maintenance triggers listed above to determine if the site will require vegetation management and, if so, the amount and type of work necessary to provide adequate flow conveyance. Whenever possible, invasive vegetation removal is prioritized over native vegetation removal for flow conveyance.

4.2.2 Access to Valley Water Flood Protection Facilities

Vegetation management activities are conducted to maintain access to Valley Water’s channels and other appurtenant facilities for inspection, maintenance, and emergency response purposes. These activities are also conducted to establish staging areas for facility inspection and maintenance activities. This work category involves activities to maintain line-of-sight clearance and appropriate height clearances for vehicles and maintenance staff. Vegetation management may in some cases also be needed adjacent to public roads, sidewalks, recreational trails, and traffic or other signage to maintain safety for both Valley Water staff accessing facilities and the general public. Typical work activities conducted for access and staging reasons include pruning of

obstructive vegetation, mowing, or application of herbicide on maintenance roads and ramps. Vegetation removal, mowing, or pruning may also be needed to provide access to bank stabilization sites or for other maintenance activities.

Maintenance Triggers for Access and Staging

Vegetation management activities to ensure adequate access to Valley Water's facilities and for establishment of staging areas are triggered when any of the following conditions are observed:

- Essential access to Valley Water facilities is not possible (e.g., fallen or hazard tree is blocking a maintenance road or access ramp leading into a channel); or
- Vegetation growth along public roads, existing maintenance roads, access ramps, maintenance footpaths, and fence lines significantly impairs access. Such impairments may hinder safe pedestrian access or cause damage to vehicles or equipment traveling along the roadway or ramp.

Herbicide application is conducted pre-emptively on public roads, maintenance roads, access ramps, maintenance footpaths, and fence lines and therefore does not have a specific trigger mechanism. Post-emergent herbicide application to maintain access is planned and scheduled for dry periods during spring through mid-fall ~~through late spring~~ before weeds or other undesirable vegetation become established. Pre-emergent herbicide application for access typically occurs from October through February to coincide with the rainy season. While some maintenance sites may be accessed through public roads, established maintenance roads, footpaths, or ramps, access to some maintenance sites may require vegetation management outside of the established access routes to allow staff, equipment, and materials to reach the site.

4.2.3 Structural Integrity of Facilities

Vegetation management activities, including controlling herbaceous and woody volunteer growth and removing invasive plants, are conducted to protect the structural integrity of Valley Water flood protection facilities and to manage Valley Water lands. Vegetation growth can damage the structural integrity of concrete wing walls, appurtenances, levees, floodwalls, berms, concrete-lined channels, fences, and other facilities.

Maintenance Triggers for Protecting Structures

Work is conducted to protect Valley Water flood protection facilities and manage Valley Water lands when any of the following trigger conditions are observed during inspection:

- Conditions are present that could degrade the structural strength of such facilities (for example, vegetation growing in concrete weep holes and expansion joints); or
- Vegetation is directing flows into a channel bank, leading to erosion; or
- Dead or dying trees are threatening to damage facilities if they topple.

4.2.4 Fire Resilience

Vegetation management activities are conducted to reduce wildfire risks. Regular preventative maintenance activities (such as mowing, grazing, pruning, herbicide application, vegetation removal, invasive plant removal, and removal of dead or dying vegetation and trees) are performed to reduce combustible vegetative fuels and meet local and state fire codes. A reduction in fuel loads can reduce wildfire severity and thus improve ecosystem resilience. Therefore, there may be instances where these types of vegetation management activities would provide a benefit to habitat and wildlife species even though adverse impacts could occur during the vegetation management activity. In order for this work to be considered beneficial, a Registered Professional Forester (RPF) and/or a qualified biologist would be required to provide a professional opinion that habitat function would improve with implementation of the vegetation management activities and describe their reasoning in reaching this conclusion. Such activities may also be necessary to address specific fire safety concerns, such as increased fire risk due to encampments or to protect communities and properties located within the Wildland-Urban Interface (WUI)[1] from the risk of wildfire. In other cases, Valley Water may need to conduct vegetation management for this purpose when a wildfire threat to high-value older native trees or restoration sites is identified.

In addition, in the event that a wildfire or human-caused fire occurs at or near Valley Water facilities and/or on Valley Water lands, Valley Water may need to conduct a range of post-fire vegetation management practices to ensure public safety. This work may involve removing burned vegetation and pruning or removing damaged and otherwise hazardous trees that pose a safety risk to Valley Water staff, members of the public, and/or the functional integrity of Valley Water's facilities. In the event of a significant fire along one of Valley Water's channels, Valley Water will inspect the burned area and assess the risk for additional post-fire impacts, including streambank erosion or other water quality effects. Based on this assessment, Valley Water will determine if additional post-fire maintenance actions are required.

Maintenance Triggers for Fire Safety

Work to address fire risk hazards is triggered when any of the following conditions are observed:

- Vegetation at Valley Water facilities presents a fire hazard according to local or state ordinances or other guidance; or
- A need for fire risk reduction is identified based on factors such as local fire codes and the effects of local micro-climates (e.g., temperature, wind); or

[1] The Wildland-Urban Interface is a geographic zone where undeveloped wildland vegetation overlaps with human development. In the SMP Program area, the upper portions of the areas along Lllagas Creek, Coyote Creek, and Upper Silver Creek that are maintained under SMP are examples of the WUI zone.

- Flammable vegetation is present around encampments and a fuel ladder exists;
- Dead, dying, or previously burned vegetation or trees are observed during facility inspections and create a fire risk; or
- Highly flammable vegetation is observed near higher-value, older native trees and other high-value ecological assets.

Herbicide application is conducted pre-emptively on maintenance roads and therefore does not have a specific trigger mechanism. Herbicide work on maintenance roads serves a dual purpose of providing maintenance access and establishing fuel breaks along property boundaries and, often, adjacent to neighboring properties.

Where invasive plants have reached a density that creates a fuel load or fuel ladder hazard and threatens the native plant community, or where invasive plants are present at a density that contributes to existing fire concerns, Valley Water will prioritize removing invasive plants for fuel reduction. Once the invasive plants have been removed, Valley Water may reassess sites for additional fire concerns.

Work activities conducted under this category are performed after an inspection of the facility has identified vegetation that could be considered a fire hazard. Work assessments are performed on a site-by-site basis, and staff determine the appropriate abatement method.

4.2.5 Hazard Trees

In some instances, trees may require pruning or removal if they pose a public safety hazard along or near Valley Water lands, facilities, channels, access roads, or access ramps. Hazard trees may include dead or dying trees, parts of live trees, or unstable live trees (because of structural defects or other factors) that are within striking distance of people or property (a “target”). Hazard trees have the potential to cause death, injury, fire, flooding, or property damage. Over the years, pruning and removal of hazard trees has become more relevant due to factors such as droughts; changes in weather patterns; increasing size and age of trees along urban creeks; increased development near Valley Water facilities; spread of invasive tree species; increased impacts to trees from decay, fungi, and boring insects; and the general trend of declining tree health due to the compounding impacts of all these factors. ~~Because it takes time – often years – for trees to respond to changing environmental conditions, Valley Water’s arborists are just beginning to observe the drought effects on trees that started in 2012.~~ Valley Water arborists have observed significant tree decline and mortality related to the droughts starting in 2012. Drought related tree issues are projected to continue. In addition, an increase in encampments in Valley Water’s channels has resulted in damage to trees, which may pose additional public safety hazards.

Hazard tree management activities may include tree removal or pruning to remove dead, dying, defective, or diseased tree parts. This work may be conducted to reduce the risk of hazard trees or limbs falling on Valley Water facilities, roads, other infrastructure, adjacent properties, or humans. Trees that are predicted to become hazardous in the future may also be pruned to promote safe and healthy growth in the future. Early correction of hazardous tree concerns is often optimal for overall tree health. These activities may also require vegetation management to access the hazard tree site.

Maintenance Triggers for Hazard Trees

Hazard tree pruning and removal efforts will be triggered by ISA Certified Arborists holding a Tree Risk Assessment Qualification (TRAQ). Only trees with current hazards or projected future hazards to people, property, roads, other infrastructure, or Valley Water facilities will be managed under the hazard tree program. ~~Pruning and removal of hazard trees are triggered when the tree or dead, dying, defective, or diseased tree parts have a high likelihood of failure within the coming year (due to storm, high wind, natural decay, or other causes) and the falling of that tree or tree parts could pose a direct hazard to people, property, roads, other infrastructure, or Valley Water facilities.~~ Upon receipt of a public request or staff request regarding a potential hazard tree, Valley Water will arrange for an International Society of Arboriculture (ISA)–certified arborist to conduct a hazard tree risk assessment in accordance with ISA standard protocols. Based on the results of the assessment, subsequent maintenance activities will be taken to reduce or eliminate potential impacts to a target.

4.2.6 Restoration Site Maintenance

Vegetation management activities are conducted to maintain restoration sites that were created by Valley Water for stewardship and/or mitigation purposes. Many of these sites involved planting or replanting the channels, channel banks, and adjacent upland areas with native, riparian vegetation to improve the riparian corridor and encourage the establishment of riparian vegetation as well as support aquatic and other wildlife species. Vegetation management work done as part of restoration site maintenance will be conducted with the primary goal of maintaining the revegetation. Work will not reduce the size of a restoration site below what is described in the relevant planning documents.

Maintenance Triggers for Restoration

Maintenance of restoration sites is triggered when any of the following conditions are present:

- Vegetation management is required to maintain the ecological function of these sites, such as when they are adversely affected by the presence of non-native vegetation or when pruning or thinning of native vegetation would improve overall ecosystem function; or

- Installed vegetation is overgrown and needs pruning to reduce fire and public safety hazards or maintain channel conveyance capacity or maintenance access while keeping the designed restoration site function intact; or

- Expansion of native plant species threatens to result in an undesired habitat type conversion (e.g., when a site that was designed as a freshwater wetland threatens to convert to a riparian woodland due to encroaching willows).

In some cases, selective thinning of trees or coppicing may take place to promote overall health of revegetation sites. Restoration site maintenance may also include removal of woody vegetation that is recruiting from revegetation sites into adjacent floodplains where the project design cannot handle woody vegetation, in areas where such removal is compatible with the restoration site's management plan and success criteria.

4.2.7 Ecological Health – Invasive Plant Management

Vegetation management is conducted to control the spread of invasive plants. This work is done in accordance with the provisional invasive plant management guidelines described in Section 4.4. These activities may either occur as a stand-alone invasive plant management project or in conjunction with other planned maintenance activities to improve the ecological health of the site and vicinity. Section 4.4 below provides more information on this activity including an important new planning activity by Valley Water to develop an IIPMP. The goal of this program is to address invasive plants found at Valley Water facilities and provide district-wide consistent guidance and approach to managing invasive plants.

Maintenance Triggers for Invasive Plant Management

Invasive plant management work is triggered when any of the following conditions are present:

- The presence of invasive plants threatens to degrade the ecological function and value of a site. This could include threats to reduce the health or abundance of native plants, convert the site away from a desired habitat type, reduce the site's value for wildlife, adversely affect significant native trees, or otherwise degrade the ecological function of the site; or

- A site inspection has resulted in a determination that the establishment or continued growth of non-native and invasive vegetation creates unnatural vegetation densities and associated fire concerns, resulting in a fire safety threat or a threat to the continued growth, natural recruitment, or survival of native species. Non-native and invasive vegetation can establish, outcompete, and overwhelm native vegetation, degrading habitat value.

Section 4.4 provides more information regarding invasive plant management actions.

4.2.8 Ecological Health – Other

In the interest of stewardship, vegetation management activities are conducted to promote either the health of individual trees or the overall ecological health of a stream.

Maintenance Triggers for Ecologic Health

Work conducted for ecological health purposes is triggered when an inspection along a particular stream identifies diseased or damaged trees, overcrowding of trees, or another condition that has potential to reduce the ecological value of a site. Maintenance activities conducted under this category include corrective pruning to preserve the health of individual trees and removal of diseased trees (e.g., those infected with Sudden Oak Death) to minimize the potential for spreading pathogens to other trees in the vicinity. In situations where overcrowding of trees has led to unhealthy growth patterns, Valley Water may conduct vegetation thinning through selective tree removal. Such work would be focused on removing trees less than 12 inches dbh.

Vegetation management work conducted for ecological health may also include any other work that maintains or improves a desired ecological function of a site. This may include activities that improve the site's value as wildlife habitat, maintains the presence and function of a desired ecological community, or provides another ecological benefit. All work conducted for the purposes of promoting ecological health requires an evaluation by both an ISA-certified arborist (if trees are being removed or pruned) and a Valley Water biologist.

4.3 VEGETATION MANAGEMENT ACTIVITIES

The following subsections describe vegetation management activities that are conducted routinely within and outside of Valley Water's channels in the Program area to meet the purposes described in Section 4.2. The primary vegetation management activities described below are vegetation removal, tree removal, pruning, coppicing, mowing, grazing, and herbicide application.

4.3.1 Vegetation Removal

Vegetation removal is conducted on woody and herbaceous vegetation less than 6 inches dbh. Work may occur throughout the channel cross--section, including but not limited to instream and immediate overstory areas, stream banks, levees, access roads, pedestrian paths, outboard areas, bridges, outfalls, and culverts. Vegetation removed may include native, non-native, and invasive trees, shrubs, vines, emergent vegetation, aquatic vegetation, and other growth forms. Examples of vegetation removal are removal of cattails from a creek or removal of a small tree near a bridge crossing.

Vegetation removal activities are typically performed using small hand tools or mechanized tools, such as chainsaws or pole saws. In some cases, mechanized equipment may be mounted on a vehicle such as a Marsh Master®. Cut vegetation is transported from the channel bed to an access road by hand or by mechanical equipment such as a crane, excavator, or loader. Vegetation may be chipped on site or hauled away in dump trucks or compactors. Chipped material left on site will not be discharged into the water or left in locations where it may be washed into the water in quantities deleterious to fish and wildlife.

Vegetation removal activities are typically accompanied by cut-stump or foliar treatment with herbicide unless otherwise noted in the work order. Foliar herbicide application is performed using tools such as backpack sprayers or truck and hose; drip cans, a spray bottle, or a paintbrush are used to provide a specifically focused application, such as during cut-stump treatment. The best method and equipment are selected for each job with the goals of maximizing efficacy, minimizing herbicide use, and limiting herbicide exposure of Valley Water staff and the public. Note that cut-stump or foliar herbicide treatment following vegetation removal is considered part of the vegetation removal activity.

Valley Water is continually refining vegetation management practices to achieve desired results in the optimal manner, based on staff experience and advances in research and industry practices. Therefore, where appropriate, Valley Water may use other methods

of vegetation removal, including but not limited to methods such as hack-and-squirt[2], girdling[3], and herbicide injection[4].

Vegetation Removal Requirements

1. Table 10-2 in Chapter 10, *Mitigation Program*, provides mitigation ratios by channel type that would be used to determine mitigation requirements.

2. All vegetation removal activities require a biological survey.

4.3.2 Tree Removal

Tree removal refers to the removal of any tree greater than 6 inches dbh. As described in Section 4.2, tree removal may be necessary to provide channel conveyance capacity, fire safety, and maintenance access to improve the ecological health of the stream. Tree removal may also be necessary to prevent damage to other facilities such as when the tree is growing between narrowly spaced fences and the tree is thus unlikely to reach healthy maturity. Removal of hazard trees may also be needed to ensure public safety along or adjacent to Valley Water land, facilities, channels, access roads, and access ramps.

For tree removal work, Valley Water removes the above-ground portions of a tree using mechanized or non-mechanized hand tools. Stumps of removed trees may be treated with herbicide to prevent regrowth. This is not considered part of the herbicide work described in Section 4.3.7, but instead, part of the tree removal activity. Cut--stump treatment with herbicide is assumed for all tree removal work, unless otherwise noted in this manual. Where appropriate, stump grinding (i.e., where a device is used to physically grind down a tree stump while leaving the root structure in place) may also be used during tree removal.

Tree Removal Work Considerations

Both native and non-native trees located within or on a channel, channel bank, or levee may require removal if flow conveyance capacity is reduced, the structural integrity of a facility is compromised, necessary visual inspection of infrastructure is prevented, or the tree poses a wildfire or public safety risk. Tree removals are evaluated carefully, and native trees are given a higher level of consideration for preservation than non-native species. While non-native species are less desirable, all tree species have potential to

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[2] Hack-and-squirt herbicide application involves the use of an axe, machete, or similar tool to create an opening through the bark of a woody plant, followed by the application of concentrated herbicide directly to the cambium through the opening.

[3] Girdling is a method of killing a tree but leaving it standing in place by removing a strip of bark and cambium around the entire circumference of the trunk, thereby preventing transport of materials from the roots to the canopy. Application of herbicide to the cut surface may increase the efficacy of this method.

[4] Herbicide injection involves the use of an injector tool, analogous to a syringe, to inject concentrated herbicide through the stem or trunk directly into the interior tissue of a plant.

provide some habitat value to the riparian ecosystem. Not all non-native trees may be appropriate candidates for removal. Prior to conducting non-hazard tree removal activities, Valley Water staff take into consideration several factors at each potential tree removal site during the work planning process. Such factors include, but are not limited to, the following:

1. Presence or absence of adjacent trees of similar stature providing equivalent habitat functions, such as roosting, nesting, or perching sites; shaded riverine aquatic (SRA) habitat; or other valuable habitat attributes.

2. Current or documented use by wildlife that would be difficult to replace locally (i.e., near the tree removal location) if the tree were removed. Such uses would include raptor nests, evidence of use by cavity-nesting species, and evidence of a rookery.

3. Instances in which the tree is providing vegetative structure (root system) to a stream bank that is likely to erode if the tree is removed. In such cases, pruning or thinning will be considered instead of removal to retain the soil stability function. Root wads are typically left in place with tree removal activities to help maintain creek bank integrity.

After considering the above-listed factors at a particular work site and depending on the purpose(s) for conducting a tree removal, Valley Water staff then develop specific recommendations as to which tree(s) should be pruned, thinned, or removed altogether.

Tree Removal Requirements

1. Table 10-2 in Chapter 10, *Mitigation Program*, provides mitigation ratios by channel type that would be used to determine mitigation requirements.

2. All tree removal activities require a biological survey. In certain circumstances, the work may need to be supervised by a certified arborist.

4.3.3 Pruning

Pruning refers to removal of selected branches from trees or shrubs to achieve a defined objective. Pruning may be conducted with mechanized or non-mechanized hand tools. Pruning typically takes place along maintenance roads, fences, access ramps, ~~and~~ levee slopes, public or private roadways, sidewalks, and around traffic or other signage. ~~although it~~ It may also occur in-channel or along terrace areas. As described in Section 4.2, pruning may be conducted to ensure access to Valley Water facilities, protect Valley Water infrastructure, maintain channel conveyance capacity, reduce wildfire risk and ensure public safety, among other purposes. Pruning work conducted along maintenance roads and fence lines is prioritized based on the impacts to vehicle and pedestrian traffic and the length of time elapsed since the last pruning event. Facilities require pruning at varying intervals; some are scheduled for pruning annually, while others are scheduled for pruning every 2-3 years.

Corrective pruning, generally associated with the “Ecological Health – Other” vegetation work purpose, involves the removal of individual woody plant parts and is conducted with mechanized and non-mechanized hand tools. Corrective pruning may be conducted anywhere along the stream. Corrective pruning is prescribed by a certified arborist and

may address defects that affect the health of the individual tree or shrub or could eventually result in whole tree/shrub failure. Examples include co-dominant leaders, decayed or diseased limbs, extensive branch dieback, incorrect previous pruning, or injury due to storm or mechanical damage. Corrective pruning may be used as an alternative to tree removal.

General Pruning Requirements

Pruning requirements have been incorporated into the SMP to provide a consistent approach to this work activity. Pruning can stimulate new growth, change energy allocations in woody plants, and sometimes weaken plants or make them more susceptible to pathogens and disease. Excessive pruning of a plant in one season can initiate a sprouting response in the plant that can take many years to correct or amend. Typically, no more than 25 percent of the structure of an individual tree will be removed in one season. Rare cases may differ, however, such as where a codominant leader that makes up more than 25 percent of the structure of the tree must be removed in one season to improve the health of a tree. The following pruning standards are used, except for cases where these standards create unsafe conditions for workers:

1. Pruning will be conducted by qualified staff in a manner that will fulfill requirements set forth in MGs or achieve other maintenance goals of the facility while preserving the short- and long-term health of the vegetation.

2. Pruning will be performed according to American National Standards Institute (ANSI) A300 Tree Care Standards (Clause 5) Pruning (2023) ~~(Part 1) 2017 Pruning~~, ANSI Z133.1 – 2000 Safety Requirements and ISA *Best Management Practices Tree Pruning* (2019 or most current version).

3. Pruning tools will be kept sharp and disinfected frequently with an approved agent (e.g., isopropyl alcohol, Lysol®), particularly when working on diseased/dying plants or moving among several locations.

Corrective Pruning Requirements

1. All corrective pruning will be performed according to ANSI A300 (Part 1) 2017 Pruning, ANSI Z133.1 – 2000 Safety Requirements and ISA) *Best Management Practices Tree Pruning* (2019 or most current version).

2. Corrective pruning will be prescribed~~, and trees will be marked~~ by an ISA-certified arborist.

4.3.4 Coppicing

Coppicing is severe pruning of shrubs and trees to ground level. Coppicing may be used to create annual “sucker” growth that may be used as cutting material for direct installation in mitigation projects. The plants and trees that are chosen might typically be targeted for complete removal (e.g., near bridges) but instead are coppiced routinely as a propagule source. Typical species used for coppicing are willows, mulefat, and poplars. After the plant or tree is cut back to the ground, rather than treating the remaining stump with herbicide, Valley Water staff leave the plant or tree in place to resprout and provide an ongoing cutting source. Selected plants and trees within each of the major watersheds may be dedicated to this activity.

Coppicing may also be used as a technique to improve fire resilience by reducing the above-ground fuel load. As fire is generally suppressed in the urban portions of the SMP area, fuel loads can become unnaturally large, leading to the potential for larger, more destructive fires. When used for fire resilience, coppicing may target native plants and small trees, such as coyote brush and elderberry. Similar to coppicing for a cutting source, coppicing for fire resilience involves leaving the plant or tree in place to resprout and grow rather than treating the remaining stump with herbicide. Coppicing for fire resilience is an alternative to complete removal and promotes a healthy, native plant–dominated riparian ecosystem.

Coppicing promotes multi-stemmed regrowth and may transform a single--trunk, standard growth form into a multi-trunked growth form. Hand-held and small mechanical tools are typically used for coppicing. Larger equipment may be necessary to remove the vegetation from the channel, after which it would be hauled away.

Coppicing Requirements

Plants and trees that would otherwise need to be removed may be good candidates for coppicing.

4.3.5 Mowing

Valley Water routinely mows ruderal vegetation growing along access roads and on terraces, outboard areas, levees, channel slopes, and fence lines to provide visual access for facility inspections, allow vehicle equipment/maintenance access, and to maintain flow conveyance or fire safety. Except when performed for flow conveyance, mowing is conducted in accordance with local fire codes~~, which require that all weeds and grasses be maintained below 6 inches in height for 10 feet laterally on both sides of access roads.~~ Mowing is also conducted to maintain 30 feet of vegetation clearance around structures where Valley Water has land rights. In some cases, mowing may be required for flow conveyance, as may be specified in Operations and Maintenance Manuals for a capital flood protection project.

This work is conducted either manually with handheld equipment (e.g., string trimmer) or through mechanical mowing.

Manual mowing methods are typically employed in areas where space is limited and no access roads are available. Manual mowing is typically conducted around trees, posts, fences, maintenance holes, pipes, rocks, and other objects that could cause damage to a mechanical mower. Manual mowing may also be used in places where access or sensitive species issues preclude use of mechanical mowers, such as restoration sites, areas where rodent barriers have been installed, or when mechanical mowing equipment is unavailable.

Typically, grasses are cut to a height of 3-6 inches, depending on conditions and the potential for presence of sensitive species. Mowing may occur at any time of year. Valley Water generally aims to complete manual mowing activities during the spring and summer season. However, depending on weather conditions, mowing sometimes occurs throughout the summer and fall seasons. Small shrubs and saplings sometimes sprout in areas where mowing is routinely conducted. Because manual mowing equipment is an inefficient tool for cutting these, manual mowing crews may occasionally use hand-held loppers to cut tree and shrub saplings that are less than 2 inches in diameter. In the

situations where loppers are used, cut-stump herbicide may be included as part of the activity.

Mechanical mowing is typically performed in areas where there is an access road and enough space for larger equipment, such as a tractor-mounted boom mower, tractor, or flail mower attachment on an excavator. Prior to conducting mechanical mowing activities, Valley Water and/or its contractors typically conduct a series of safety checks and inspections to minimize fire hazards. For example, and as described below under "Mowing Requirements," the contractor will check fire weather predictions for air temperature, humidity, and wind speeds. Maintenance staff also inspect all equipment to ensure it is in good working condition and the mower is free of flammable materials. Before mowing, maintenance staff inspect the area to be mowed for rocks and other objects that can produce a spark. Similar to manual mowing activities, grasses are typically cut to a height of 3-6 inches and mechanical mowing work typically occurs during the spring and summer.

No mowing occurs during periods of high fire risk. Red Flag Warnings and Fire Weather Watches are location- and time-specific. No mowing occurs when the National Weather Service has issued a Red Flag Warning within the specific time and location that mowing activity is planned to occur. When a Fire Weather Watch has been issued, mowing will be discontinued if two of the three "fire weather watch" conditions are present: ambient air temperature of 80 degrees Fahrenheit (°F) or greater, relative humidity of 30 percent or lower, and/or wind speeds of 10 mph or greater.

Mowing Requirements

All standard procedures for biological clearances apply in accordance with the applicable BMPs as described in Attachment A. For any work performed by contractors, the contractors must attend annual BMP training and complete daily BMP checklists. In accordance with guidance from the California Department of Forestry and Fire Protection (CAL FIRE), mowing may not occur if two of the following three conditions are met: ambient air temperature of 80°F or greater, relative humidity of 30 percent or lower, and/or wind speeds of 10 mph or greater.

4.3.6 Grazing

Grazing is used in limited circumstances to control grasses and herbaceous weeds and reduce fire hazards or to maintain flow conveyance on floodplains on land where Valley Water has land rights. Grazing involves the use of goats to manage non-targeted weed growth. Before grazing commences, a Valley Water biologist evaluates a targeted area to identify sensitive resources, including wetlands, special-status plants, special-status wildlife, and other aquatic resources. Sensitive resources and vegetation to be preserved are fenced off as a protective measure. Goats are excluded from grazing in wetted channels, wetlands, and other aquatic resources. Once fencing has been installed, a herd is placed on the targeted area.

Grazing Requirements

All standard procedures for biological clearances apply in accordance with the applicable BMPs, as described in Attachment A. When grazing will take place in or near salt marsh harvest mouse habitat, a qualified biologist will oversee fence installation to exclude

grazing animals from habitat for salt marsh harvest mouse. Once exclusion fencing has been installed, a biologist does not need to be on site to monitor grazing.

4.3.7 Herbicide Application

In addition to the mechanical and hand vegetation suppression methods described above, herbicides are also used to support channel conveyance capacity, maintenance access, fire and public safety, infrastructure inspection/protection, revegetation site maintenance, manage invasive plants, and ecological health.

In the SMP area, herbicide application is performed for many purposes on herbaceous, invasive, and emergent vegetation, including grasses, broadleaf weeds, cattails and bulrush, and small (less than 2 inches dbh and less than 8 feet high) woody saplings. Herbaceous and emergent vegetation may impede flow conveyance and create fire hazards. Invasive plant species may impede flow conveyance, increase fuel loads, and have adverse ecological impacts such as out-competing more desirable native species, resulting in habitat degradation.

Herbicide application is performed to limit weed growth, seeding, and expansion into new areas; reduce weeds in restoration sites; control invasive plants; maintain road and fence line rights--of--way and firebreaks along and beyond the top of bank; prevent vegetation encroachment into Valley Water facilities; maintain vegetation-free areas as buffers; and provide localized treatments to protect facilities and resources.

Avoiding and Minimizing Environmental Effects

Valley Water strives to achieve the desired vegetation control while balancing environmental and economic considerations. Herbicides are used on a site-by-site basis and only when necessary.

When used appropriately, herbicides are, in many cases, the lowest disturbance method for achieving the correct level of vegetation control. The selection of an approved herbicide, sometimes coupled with the use of an appropriate surfactant (in accordance with label recommendations), can provide a high level of vegetation control, which may reduce maintenance frequency and minimize recurring physical impacts to the site compared to mowing or other control methods. Targeted use of herbicides often eliminates the need to bring in heavy mowing equipment or large hand crews that can be more disruptive to on-site biological resources.

Valley Water complies with the Integrated Pest Management requirements of the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (MRP). The MRP mandates that pesticides (in this case, specifically herbicides) be used only when other methods, such as mulching, mechanical weed abatement, hand pulling/weed abatement, and grazing, have proven impracticable. When pesticides are used, the least toxic products that will meet the need are used at the lowest effective rate. All herbicide applicators are required to obtain a Qualified Applicator Certificate (QAC) or Qualified Applicator License (QAL) from the California Department of Pesticide Regulation (CDPR).

Valley Water continually works to minimize pesticide use as much as is practical. Valley Water's pesticide use is reviewed regularly as part of the compliance effort with the MRP and is consistent with CDPR requirements and court orders related to protections for

threatened and endangered species. For instance, a 2004 United States District Court order stipulated requirements regarding certain pesticides applied near salmon-supporting waters (CDPR 2023a; see **http://www.cdpr.ca.gov/docs/endspec/salmonid.htm** for further information). A 2006 USEPA injunction and order addressed the establishment of no-use buffer zones surrounding California red-legged frog upland and aquatic habitats for certain pesticides (CDPR 2023b; see **http://www.cdpr.ca.gov/docs/endspec/rl_frog/index.htm** for further information).

In addition, Valley Water complies with the Statewide General NPDES Permit for Residual Aquatic Pesticide Discharges to Waters of the U.S. from Algae and Aquatic Weed Control Applications (SWRCB Water Quality Order 2013-0002-DWQ; General Permit # CAG990005). This permit covers aquatic discharges of herbicides containing 2,4-D, diquat dibromide, endothall, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, sodium carbonate, peroxyhydrate, and triclopyr. As required by the General NPDES Permit, Valley Water conducts aquatic herbicide applications according to a state-approved Aquatic Pesticide Application Plan (APAP). In accordance with permit conditions and the APAP, Valley Water staff record the type of herbicide used and where it has been applied. Annual monitoring reports are submitted to SWRCB and the RWQCBs to document aquatic herbicide application events, effectiveness of BMPs, and monitoring data.

Activity Description

The application of herbicide occurs in-channel (below Ordinary High Water Mark [OHWM]) on lower elevation maintenance roads, access ramps, and terrace areas, as well as on non-in-channel areas (above OHWM) such as upper elevation maintenance roads, fence lines, and inboard or outboard levee slopes. Various herbicide formulations may be used. All herbicide applications are performed using equipment appropriate to the specific application type.

Valley Water's vegetation management staff inspect all maintenance roads, fence lines, and access ramps and apply herbicide as necessary. On unpaved access roads, herbicide is applied from a truck-mounted boom, handgun, or backpack (used around gates or curves), as needed to control weeds, allow maintenance access, and provide firebreaks. The booms have multiple nozzles specifically calibrated to provide the dosage and spray pattern appropriate to the area. Equipment is regularly calibrated to ensure that application rates are consistent with written recommendations. The application is managed from an onboard computer mounted in each spray rig.

Pre-emergent herbicides are applied to Valley Water maintenance roads and fence lines to prevent vegetative growth that could impede access and along property lines to provide firebreaks. Valley Water does not typically apply pre-emergent herbicide to lower maintenance roads.

Follow-up treatments of post-emergent herbicide are typically applied to all maintenance roads and along property lines as needed. Post-emergent herbicides are applied via spot spraying or cut-stump applications, which limit the amount of herbicide used.

During all herbicide applications, notifications are posted near treated areas to notify the public of the application. These notifications remain in place at a minimum until the application dries to reduce the risk of incidental exposure.

Herbicide application may be used to treat saplings that are less than 2 inches dbh and less than 8 feet in height. To reduce the total amount of herbicide applied, Valley Water may, in some circumstances, elect to cut these saplings and treat them with cut-stump herbicide rather than applying foliar herbicide. In circumstances where cut-stump treatment is used instead of foliar application as part of a broader herbicide application action, this activity will follow all rules, requirements, and reporting mechanisms of the herbicide application activity.

In some cases, small saplings may also be present in mowing target areas and cut-stump treatment may be appropriate. In all other cases, herbicide used to treat cut stumps following removal of woody vegetation and trees or mowing activities is considered part of that activity as addressed in Section 4.3.1, Vegetation Removal; Section 4.3.2, Tree Removal; and Section 4.3.5, Mowing.

Application of Aquatic Herbicides and Adjuvants

Only herbicides and adjuvants that have been approved for aquatic use by USEPA and are registered for use by CDPR are used for SMP aquatic vegetation control. The lowest recommended rates of herbicides and adjuvants are used to achieve maintenance purposes and objectives and to achieve desired control. An indicator dye may be added to the tank mix to help the applicator identify areas that have been treated and monitor the application. Aquatic herbicides are applied to emergent vegetation and plants growing near the wetted channel, not to the water surface itself.

Adjuvants are materials that are added to herbicide mixtures to enhance their performance. One type of adjuvant is a surfactant, which may assist with spreading over the vegetation, sticking to the foliage, penetrating thick cuticles, or otherwise increasing the efficacy of the application. For most aquatic herbicides, the manufacturer requires or highly recommends the use of a surfactant to achieve reasonable levels of vegetation control. In instances where surfactants are absent from the tank mix, the level of control is often reduced. Where vegetation control is reduced, a higher return frequency may be required, resulting in more herbicide being used in the system and more frequent disturbance to the site. Adjuvant use is limited to products that are documented to have the least toxic effect to aquatic life.

Table 4-1 summarizes the active ingredients in herbicides and adjuvants that would be used under SMP-3 as well as the usage type, example product types, application frequency and method, and projected annual application amounts that would be used to treat upland vegetation and aquatic vegetation.

As new products become available, Valley Water evaluates them and adopts materials that achieve optimum control while affording the best protection to environmental resources. New products may be substituted as they become available, provided the new products do not exceed the toxicity or usage limits of the products they replace. It is the intent of Valley Water that new products will not increase the level of toxicity to non-target receptors.

TABLE 4-1
Summary of Herbicide and Adjuvant Types Used under SMP-3

Typical Application Location	Active Ingredient	Usage Type	Example Product Trade Names	Application Frequency and Method	Projected Annual Use
Upland Vegetation					
Upper maintenance roads and inboard or outboard levee slopes	Glyphosate	Post-emergent, Cut-stump	Round Up Pro Concentrate	1-2 times/year; target specific vegetation, spot spray, or cut-stump	600 gal/yr
	Triclopyr	Post-emergent, Cut-stump	Garlon 4		6 gal/yr
	Aminopyralid + triclopyr	Post-emergent	Capstone		300 gal/yr
	Clopyralid	Post-emergent	Transline		4 gal/yr
	Isoxaben	Pre-emergent	Gallery 7 DF	1 time/year; broadcast application to bare ground	500 lb/yr
	Dithiopyr	Pre-emergent	Dimension Ultra 40WP		600 lb/yr
	Aminopyralid	Pre-emergent and post-emergent	Milestone	1-2 times/year; broadcast application for pre-emergent use; target specific vegetation or spot spray for post-emergent use	200 gal/yr
	Aminopyralid + Florpyrauxifen-benzyl	Post-emergent	Terravue	1-2 times/year; target specific vegetation or spot spray	200 gal/yr
	Ethyl oleate	Non-ionic surfactant	Competitor	Surfactant may be used in conjunction with application of other active ingredients	100 gal/yr

Typical Application Location	Active Ingredient	Usage Type	Example Product Trade Names	Application Frequency and Method	Projected Annual Use
Aquatic Vegetation					
In channel, lower maintenance roads, access ramps, and terrace areas	Glyphosate	Post-emergent, Cut-stump	Rodeo	1 time/ year; target specific vegetation/spot spray	500 gal/yr
	Imazapyr	Post-emergent	Habitat		232 gal/yr
	Imazamox	Post-emergent	Clearcast, IMOX		100 gal/yr
	Triclopyr-choline	Post-emergent	Vastlan		100 gal/yr
	Ethyl oleate	Non-ionic surfactant	Competitor		210 gal/yr
	Paraffinic oil	Non-ionic surfactant	Agri-Dex		100 gal/yr

Notes: gal/yr = gallons per year; lb/yr = pounds per year

Herbicide Application Requirements

These requirements apply to all work areas.

1. All herbicide use must be preceded by the appropriate biological surveys and clearances.

2. All herbicide applications must be preceded by a Pest Control Recommendation provided by a California-licensed Agricultural Pest Control Advisor. A recommendation is provided after each site is surveyed and the most appropriate control methods for the site are determined.

3. Foliar applications to woody vegetation are limited to plants less than 2 inches dbh and typically less than 8 feet in height.

4. Herbicide use is permitted along the entire stream.

5. Herbicide application may occur in SMP potential range map areas for California red-legged frog and California tiger salamander only when the creek or area is dry and no rain is forecast for the next 48 hours.

6. Valley Water has coverage under the Statewide General NPDES Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States General Permit No. CAG990005 and fully complies with all provisions of that permit. In addition, Valley Water complies with IPM requirements of the MRP and court orders for threatened and endangered species, as stipulated by a 2004 United States District Court order for certain

pesticides applied near salmon-supporting waters (CDPR 2023a); the 2006 United States District Court order for pesticide application around certain California red-legged frog habitats (CDPR 2023b); and the 2010 United States District Court order regarding pesticides and eleven species found in the Greater San Francisco Bay Area (CDPR 2023c).

4.4 INVASIVE PLANT MANAGEMENT

Controlling the spread of invasive plant species is critical to improving the ecological health of our streams and watersheds. Invasive plants tend to spread aggressively and adversely alter resource allocation regimes, wildlife behavior patterns, soil stability, and water quality, resulting in degraded habitat quality and ecological value. In addition, invasive plants can exacerbate flooding and fire danger; undermine structural assets; and obstruct access to roads, levees, and trails.

Valley Water is developing a countywide IIPMP that will include an Early Detection and Rapid Response manual. This countywide IIPMP will build a unified strategy for invasive plant control across all Valley Water facilities and programs.

During SMP-2, Valley Water conducted extensive invasive plant management efforts, substantially slowing the infestation of invasive plant species in many creeks in Santa Clara County. A period of transition may be necessary between the SMP-2 to SMP-3 update and the completion of the countywide IIPMP plan. With the goal of building on the SMP-2 achievements and to avoid losing ground in the transition period, Valley Water will conduct invasive plant management activities following the interim guidelines listed below.

Once the countywide IIPMP plan is completed, some aspects of this plan will be implemented through SMP-3. These will include invasive plant management actions in the Program area, including actions in or on creeks, riparian areas, access routes, infrastructure, and immediately associated lands. Whether conducted using the interim guidelines or the protocols of the finalized countywide IIPMP plan, all invasive plant removal work conducted under SMP-3 will follow the SMP-3 BMPs. Herbicide application associated with invasive plant removal will be consistent with the active ingredients and limits described elsewhere in this manual.

Under SMP-3, invasive plant removal activities will typically be impact-neutral activities, neither generating mitigation credit nor incurring mitigation requirements.

Interim Invasive Plant Management Guidelines

Until the countywide IIPMP is completed, Valley Water will use the following interim guidelines for invasive plant management. Once the countywide IIPMP is completed, the protocols from that program, including target species to control, methods, and prioritization, will inform and supplement the interim guidelines described below.

Under SMP-3, Valley Water may remove all species described in Table 4-2 as part of invasive plant removal activity. In some cases, invasive plant removal projects will target a suite of these species; in other cases, invasive plant removal projects will target an individual species. Invasive plant removal projects may be conducted as stand-alone actions or alongside another activity, such as in conjunction with a bank repair project.

Invasive plant removal actions will be prioritized based on factors such as the degree of ecological impact from the infestation, risk of spread, opportunities for efficiency of effort, public safety risks associated with the invasion, and value of habitat that could be protected by the invasive plant removal.

TABLE 4-2
Invasive Species to Be Removed under SMP-3

Species	Common Name
Acacia (all species in genus)	acacia
Aegilops (all species in genus)*	goatgrass
Ailanthus altissima	tree of heaven
Ambrosia trifida	giant ragweed
*Araujia sericifera**	bladderflower
*Arctotheca calendula**	Capeweed
Arundo donax	giant reed
*Asparagus asparagoides**	African asparagus fern
*Brachypodium sylvaticum**	slender false brome
Broom (includes *Ulex europaeus, Spartium junceum,* and *Cystisus scoparius*)	broom species
Carpobrotus (all species in genus)	iceplant
*Carex pendula**	hanging sedge
*Carthamus lanatus**	woolly distaff thistle
Casuarina cunninghamiana, C. equisetifolia	sheoak, beefwood
Cenchrus setaceus	fountain grass
Centaurea (all species in genus)	starthistle, knapweed
Chasmanthe floribunda and *C. bicolor*	chasmanthe
*Chondrilla juncea**	skeleton weed
*Clematis vitalba**	old man's beard
Conium maculatum	poison hemlock
Cortaderia jubata and *C. selloana*	pampas grass, jubata grass
Cotoneaster (all species in genus)	cotoneaster
*Cuscuta japonica**	Japanese dodder
Cynara cardunculus	artichoke thistle, cardoon
Delairea odorata	Cape-ivy
Dittrichia (all species in genus)*	stinkweed
*Elymus caput-medusae**	medusa-head

Species	Common Name
Eucalyptus (all species in genus)	eucalyptus, gum
Euphorbia (non-native species in this genus including *E. oblongata, E. helioscopia,* and *E. characias*)	non-native spurges
*Fallopia japonica**	Japanese knotweed
Ficus carica	common fig
Foeniculum vulgare	fennel
Fraxinus (non-native species in this genus, including *F. uhdei*, *F. pennsylvanica*, and *F. angustifolia*)	non-native ash (e.g., Shamel ash, green ash, narrow-leaved ash)
*Glebionis coronaria**	crown daisy
Hedera (all species in this genus)	English ivy, Algerian ivy
*Helianthus tuberosus**	Jerusalem artichoke
*Helichrysum petiolare**	licorice plant
Hypericum (non-native species in this genus including *H. androsaemum*, *H. calycinum,* and *H. perforatum*)*	Klamathweed, Aaron's beard
*Iris pseudacorus**	horticultural iris
Juglans regia	English walnut
Lepidium (non-native species in this genus including *L. chalapense*, *L. didymum*, *L. draba,* and *L. latifolium*)	pepperweed
Ligustrum (all species in genus)	privets
*Limonium ramosissimum**	Algerian sea-lavender
*Linaria dalmatica**	Dalmatian toadflax
*Ludwigia hexapetala**	six petal water primrose
*Lythrum junceum**	creeping loosestrife
Myriophyllum aquaticum and *M. spicatum*	parrotfeather and water milfoil
Nicotiana glauca	tree tobacco
Olea europaea	olive
*Oncosiphon pilulifer**	stinknet
*Onopordum illyricum**	Illyria thistle
Palms (all species within the *Arecaceae* family)	palms
Paspalum urvillei and *P. vaginatum**	Vasey's grass and seashore paspalum
Phalaris aquatica	Harding grass
Phragmites australis	common reed

Species	Common Name
Populus nigra	Lombardy poplar
Pyracantha (all species in genus)	firethorn
Quercus ilex	holly oak
Rhamnus alaternus	Italian buckthorn
*Rhaponticum repens**	Russian knapweed
Ricinus communis	castor bean
Robinia pseudoacacia	black locust
Rubus armeniacus and *R. ulmifolius*	Himalayan blackberry and elmleaf blackberry
Salix babylonica	weeping willow
Salsola (all species in genus)	Russian thistle
Schinus (all species in genus)	pepper tree
Sesbania punicea	red sesbania, rattlebox
Solanum aviculare	New Zealand nightshade
Spartina alterniflora and hybrids	Atlantic cordgrass and hybrids
Ulmus (all species in this genus)	elms
Vinca major and *V. minor*	vinca, periwinkle

Note: Upon completion of Valley Water's Integrated Invasive Plant Management Program (IIPMP), the adopted list of species or decision-making processes of the IIPMP will replace Table 4-2.

*Species that were not part of SMP-2's invasive plant list but are included on the SMP-3 invasive plant list.

The field of invasive plant management is highly dynamic. New invasive species are detected, species' ranges expand, variations in climatic conditions shift the palette of invasive species, and new research becomes available. Because of this, effective invasive plant management requires the ability to address new species quickly. Some invasive plant species may have a broader geographic concern and therefore will be included on statewide lists, such as the California Invasive Plant Council (Cal-IPC) invasive plant rankings or the CDFA noxious weeds lists. As needed, Valley Water will update Table 4-2 to include additional invasive plant species as these statewide lists are expanded.

Other invasive plant species may present a more localized concern and may not be included in statewide lists. For these reasons, Valley Water may need to target species that are not included on the Cal-IPC or CDFA lists. In these cases, Valley Water will notify and seek concurrence from regulatory agencies prior to adding new invasive plant species to Table 4-2.

Under SMP-3, Valley Water will remove invasive plants through mechanical means, hand removal, and/or herbicide application. Herbicides used as part of invasive plant

management will follow the herbicide protocols and limits described in Section 4.3.7. Invasive plants may be removed anywhere in the Program area and in any cross-section of the creek. All relevant BMPs, as listed in Table 4-3, will be employed in any invasive plant removal activities. Invasive plant removal activities outside of the SMP-3 service area will not be conducted under SMP-3 permits.

In general, removal of invasive plants is beneficial to native wildlife in the long term. However, there are some situations in which removal of invasive plants can adversely affect the habitat value of a site in the short term. For example, certain sites may have become entirely devoid of native trees, creating a situation in which removal of invasive trees would eliminate nesting and roosting substrate for some bird species. To avoid inadvertent impacts to habitat value, a qualified biologist will evaluate areas targeted for invasive plant removal to identify any concerns about reduction of sensitive species habitat value. In some cases, the long-term benefit of the invasive plant removal will still outweigh the potential for short-term habitat impacts. In other cases, the removal project may be modified or phased to limit impacts on habitat quality.

If the qualified biologist identifies significant concerns, the removal action will be proposed to and approved by relevant regulatory agencies prior to initiating work, usually as part of the annual NPW process. As part of this notification, the qualified biologist, in consultation with vegetation specialists, may evaluate the long-term benefits of the removal action against the long-term impact of the infestation and/or may propose modified strategies to conduct the work that reduce the impact to the wildlife habitat value of the site. For some larger invasive plant removal sites, this evaluation may also take into consideration potential risk of erosion and erosion-associated water quality impacts. Strategies may be modified with measures such as phasing, timing of work, implementation of erosion control BMPs, and/or seeding with native species after removal.

4.5 IMPACT AVOIDANCE AND ACTIVITY-SPECIFIC BMPS

Table 4-3 lists BMPs that provide specific and detailed guidance applicable to the various vegetation management procedures implemented by Valley Water: vegetation removal, tree removal, pruning, mowing, grazing, and herbicide application. Fully trained and qualified field crews perform these procedures. Pre-planning general (GEN-) BMPs are also implemented as applicable to the specific site conditions and resources. The full suite of BMPs is provided in Attachment A.

TABLE 4-3
Key Best Management Practices for Vegetation Management

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

BMP Number	BMP Title	BMP Description
		further spread of the species. Cape ivy removed during a project will be bagged and disposed of in a landfill. *Arundo* canes or invasive *Ludwigia* 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. If use of such equipment requires dewatering, Valley Water will submit a dewatering plan as part of the NPW process.
VEG-4	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. 3. Grazing animals will be excluded from areas where they may negatively impact sensitive biological resources as directed by the qualified biologists. 4. Grazing animals will be excluded from wetted channels, saturated soils, and wetlands. 5. Grazing will not occur within 24 hours of rain events or when soils are saturated or subject to compaction. 6. Animals will be provided access to off-stream water sources such as troughs or wells. 7. Grazing will be managed to maintain sufficient vegetative cover to prevent erosion. 8. Grazing will be implemented on a rotational basis across designated areas to allow for vegetation recovery and minimize soil compaction.
HM-4	Posting and Notification for Pesticide Use	Posting of areas where pesticides are used will be performed in compliance with Quality Environmental Management System [QEMS] Document Q751D02 Control and Oversight of Pesticide Use as follows: 1. Posting will be performed in compliance with the label requirements of the product being applied. 2. 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, Valley Water ensures that exposure risk is minimized further by adopting practices that go beyond the product label requirements. 3. Postings will notify staff and the general public of the date and time of application, the product's active ingredients and common

BMP Number	BMP Title	BMP Description
		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 Valley Water 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, Valley Water will maintain records of neighbors with specific needs relative to notification before treatment of an adjacent area so that such needs are met.

4.6 PROGRAM LIMITS FOR VEGETATION MANAGEMENT ACTIVITIES

The woody vegetation limits described below apply to channels that do not have MGs established. These limits are provided to define the maximum project extent and to guide annual and Program-wide maintenance activities until such time as MGs are established.

Where MGs exist, projects will comply with the quantitative objectives established by the MGs, as identified in Section 3.7.

4.6.1 Pruning

Pruning activities include removal of overhanging growth from maintenance roads, ramps, levee slopes, ~~and~~ fence lines, public or private roadways, sidewalks, recreational trails, and around traffic or other signage. ~~to~~ This will provide access to Valley Water facilities, improve visibility to inspect Valley Water facilities, provide fire and public safety, protect Valley Water infrastructure, and maintain the designed hydraulic capacity of the channel systems. Pruning of overhanging growth from roadways, ramps, and fence lines does not require notification.

4.6.2 Coppicing

Coppicing will not have limits on its geographic extent because the activity is not widespread and provides an ecological benefit. No more than 20 percent overstory canopy removal will be allowed in any reach, and at least 50 percent of the understory canopy of native vegetation would be retained. Canopy removal is visually assessed based on the pre-maintenance condition.

4.6.3 Vegetation Removal

For removal of vegetation less than 6 inches dbh, MGs will guide when, where, and what work is needed on a project-by-project basis. In cases where MGs have not been developed, Valley Water will rely on record drawings or use existing channel reach

dimensions and run hydraulic models to determine when, where, and how much woody vegetation removal work is needed for flow conveyance.

4.6.4 Tree Removal

Removal of hazard trees – trees that are determined to be hazardous according to the definition described in Section 4.2.5 – is not subject to removal limits. This includes dead or dying trees and unstable live trees (due to structural defects or other factors) that are within striking distance of people or property and have the potential to cause death, injury, or substantial property damage. A hazard tree may also be defined as having a high likelihood to fall within the coming year due to its current weakened structure and due to storm, high wind, continued decay, or other causes. Valley Water prioritizes removal of identified hazard trees that could pose a direct hazard to people, access roads, or other Valley Water infrastructure.

For removal of non-hazard trees 6-12 inches dbh, the following limits will apply:

10-year Program Limit:	2,000 live trees
Annual Limit:	20 percent of 10-year limit (Up to 400 live trees)
Per-Project Limit:	No more than 20 percent overstory canopy removal in any reach, retention of at least 50 percent of the understory canopy of native vegetation
Other:	Tree removal that is necessary based on MGs or other triggers may exceed the annual and Program tree limits and will be subject to agency approval.

For removal of non-hazard trees > 12 inches dbh, the following limits will apply:

10-year Program Limit:	150 live trees
Annual Limit:	Up to 20 live trees per year
Per-Project Limit:	No more than 20 percent overstory canopy removal in any reach, retention of at least 50 percent of the understory canopy of native vegetation
Other:	Tree removal that is necessary based on MGs or other triggers may exceed the annual and Program tree limits and notifications will be subject to agency approval.

4.6.5 Mowing and Grazing

There are no limits on mowing and grazing activities for the following reasons:

1. Activities are generally conducted in areas of ruderal vegetation dominated by non-native annuals, and as such have little ecological impact.

2. Activities are likely to benefit native plant species.

3. Activities are necessary to meet fire code standards (non-discretionary).

4. On U.S. Army Corps of Engineers and Natural Resources Conservation Service levees, activities are necessary to meet agency requirements (non-discretionary).

4.6.6 Herbicide Use

Annual and 10-year Program limits are based on gallons/pounds of product and are summarized in Table 4-4. The per-project limit will correspond to the product label restrictions per application.

Herbicides are used only when alternatives such as mowing, hand removal, or grazing have been shown to be ineffective or inefficient to meet the needs and requirements of the site. Valley Water has always been conservative in the use of herbicides and currently uses only Category III (low toxicity) and Category IV (very low toxicity) as designated by USEPA. Products listed on the CDPR “A” list of known groundwater contaminants will not be used. No herbicide shall be used by Valley Water staff without a written recommendation from a Pest Control Advisor.

TABLE 4-4
Herbicide Use Limits, 2027–2036

Product	Estimated Average Annual	10-Year Program Limits
In-channel Use		
Aquatic Herbicide	932 gallons	9,320 gallons
Adjuvant	310 gallons	3,100 gallons
Non–in-channel Use		
Post-emergent Herbicide	1,310 gallons	13,100 gallons
Pre-emergent Herbicide	2,700 pounds	27,000 pounds
Adjuvant	310 gallons	3,100 gallons

Note: The projections for pre-emergent herbicides represent an approximately 79-percent reduction in pre-emergent herbicide use from SMP-2 projections. Valley Water has reduced the annual limit for pre-emergent herbicides from 13,128 pounds per year to 2,700 pounds per year based on lessons learned from SMP-2 and the need to apply substantially less pre-emergent herbicide than was anticipated under SMP-2.

4.6.7 Invasive Plant Removal Activities

There are no program limits for invasive plant removal activities.

Removal of invasive trees greater than 12 inches dbh or any invasive plant removal work that may have substantial effects on sensitive species or habitat will be proposed as part of the NPW process. Removal of invasive trees greater than 12 inches dbh will be conducted as part of an invasive plant control action and may exceed the Program limits for non-hazard tree removals greater than 12 inches dbh.

Removal of invasive vegetation < 6 inches dbh and invasive trees 6-12 inches dbh will generally be considered to have a neutral impact not requiring mitigation regardless of the vegetation management action's purpose category. In most cases, removal of invasive plants and trees would not result in impacts requiring mitigation; however, in situations where the work may have an adverse impact on habitat value, mitigation requirements would be proposed as part of the NPW process.

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CHAPTER 5. SEDIMENT REMOVAL

5.1 PURPOSE

The mechanical removal of sediment is necessary when accumulated sediment reduces flow conveyance capacity below acceptable levels to the extent that overbank flooding could occur and threaten public safety and potentially damage adjacent property. Sediment removal is also conducted when accumulated sediment meets the following criteria: (1) poses a threat to the proper functioning of Valley Water facilities or appurtenant structures; (2) has potential to divert flows and thereby result in streambank or bed erosion; (3) blocks access to Valley Water's maintenance roads, ramps, or bridge under-crossings; or (4) impedes fish passage and access to fish ladders. Sediment removal work occurs according to the triggers and MGs described below.

5.1.1 Triggers

Any of the following channel conditions may trigger sediment removal:

1. Visual observation (verified by field measurement) indicates that sediment exceeds allowable tolerances identified in the MGs.

2. Visual observation (verified by field measurement) indicates that accumulated sediment impairs the intended design or as-built function of the channel.

3. Sediment deposition poses a threat to proper function or integrity of facilities (including channel bed and banks).

4. Localized sediment deposition increases the potential for diverting flows, which could thereby result in erosion damage of channel bank or bed.

5. Sediment deposition blocks access to maintenance roads, including bridge under -crossings.

6. Sediment deposition below, above, and/or within the footprint of fish ladders impedes access during anadromous fish migration seasons. Sediment -caused impediments may vary depending on ladder size, flow regimes during migration seasons, and sediment depth. Each ladder/fish screen is assessed based on its functionality (see Chapter 11, Section 11.5, Fish Ladder/Fish Screen Inventory, for more information).

5.1.2 Assessment and Prioritization Process

Valley Water staff evaluate and prioritize sites for public safety risk based on reduced flow conveyance capacity and potential for flooding.

5.1.3 Inspections

Staff inspect channel facilities regularly to monitor stream functions and identify specific areas that require additional evaluation. Staff evaluate sediment deposition areas visually in addition to documenting them with photographs, measuring (length and depth

of sediment deposition) and collecting other site-specific information. Locations identified as needing additional evaluation are forwarded to technical staff.

5.1.4 Assessment and Analysis of Inspection Results

If needed, hydraulic modeling is performed to assess channel capacity and conveyance at locations identified for additional evaluation. In addition to hydraulic analysis, staff may collect additional field measurements and information about the site, including, but not limited to, cross--section surveys, photo documentation, and identification of potential causes of sedimentation, such as constrictions or blockages. This information is compiled to describe the current condition. The current condition is then compared to the available MGs, as-built drawings, and established LOS, where available. The resulting information is then compared against the defined maintenance triggers to determine whether the site requires sediment removal. This process also includes assessing the presence of and possible effects on sensitive habitats using the methods described in Section 3.3, Work Approach in Sensitive Habitats.

5.2 WORK ACTIVITIES

Valley Water undertakes sediment removal work during the dry season when streamflow is typically absent or low. If sediment removal work is necessary when water is in the channel, dewatering would be conducted. A temporary cofferdam and/or flow bypass system (as described in BMPs GEN-40 through GEN-42) are typically installed to prevent sediment movement downstream.

Sediment may be removed from channel beds, debris or detention basins, and culverts or pipelines using various equipment, including, but not limited to, excavators, long-reach excavators, bulldozers, scrapers, and front-end loaders. Vacuum trucks may be used for removing sediment from pipelines or culverts. Note, the SMP includes routine maintenance work in pipelines or culverts used for flow conveyance and runoff but does not include maintenance of water supply pipelines and aqueducts. Where possible, equipment is operated from the top-of-bank above and outside of the channel on maintenance access roads. Once the work area is dry or isolated from water flow, sediment may be removed from earthen or concrete-lined channels, debris or detention basins, and culverts or pipelines. Compact loaders may also be used to remove sediment from within the channel where larger equipment will not fit on the access road. Compact loaders may push the excavated sediment up an access ramp, where it is either placed directly into dump trucks parked on the access road or stockpiled at central locations along the channel for subsequent removal. Stockpiling of materials occurs as described in BMP GEN-26.

5.2.1 Channel Access and Staging

Most Valley Water-maintained channels have at least one existing access road running along the top-of-bank on one side of the channel. Some channels have access roads on both sides, while others may have a maintenance road along the lower level channel banks. Some channels do not have access roads on either side. When the channel shape, bank height, or presence of mature vegetation prevents the use of top-of-bank access roads, equipment may be deployed along interior channel access roads or terrace locations by means of existing access ramps, where these are available. Where there is no existing access into the channel, construction of a temporary access ramp

may be required. Temporary access ramps are removed upon completion of the project, as described in BMP GEN-28. Selective clearing of shrubs or trees on the banks may be necessary to provide equipment access to the channel bed. Removal of vegetation follows SMP requirements as described in Chapter 4, *Vegetation Management*.

5.2.2 Requirements

1. Perform pre- and post-project assessments on anadromous salmonid channels to assess impacts to gravels and instream habitat complexity and develop a suitable mitigation approach (see Chapter 10, Section 10.6.6, Salmonid Habitat Restoration Projects).

2. Perform water quality sampling for any site with active diversions. See the Water Quality Monitoring Plan (Attachment E) for information on (1) additional monitoring efforts and regulatory agency notification in case of exceedance of receiving water limitations, (2) monitoring procedures, and (3) details on the type of records and field documentation kept by Valley Water staff.

3. Perform sediment characterization to determine the appropriate reuse or disposal options for the removed sediment. The Sediment Characterization Plan (Attachment F) provides additional information on (1) how sediment sampling locations are selected, (2) sampling and analytical procedures, and (3) details on the type of records and field documentation kept by Valley Water staff.

5.3 IMPACT AVOIDANCE AND ACTIVITY-SPECIFIC BMPS

Sediment removal on the lower Guadalupe River is designed to occur within the specific sediment deposition reaches (SDRs) (Figure 5-1). These SDRs were designed to capture sediment when flows exceed the capacity of the main channel, allowing sediment removal while avoiding impacts on salmonid habitat.

Table 5-1 lists BMPs that staff implement during sediment removal activities to avoid potential impacts to water quality and biological resources. Pre-planning general (GEN-) BMPs are also implemented as applicable to the specific site conditions and resources. The full suite of BMPs is provided in Attachment A.

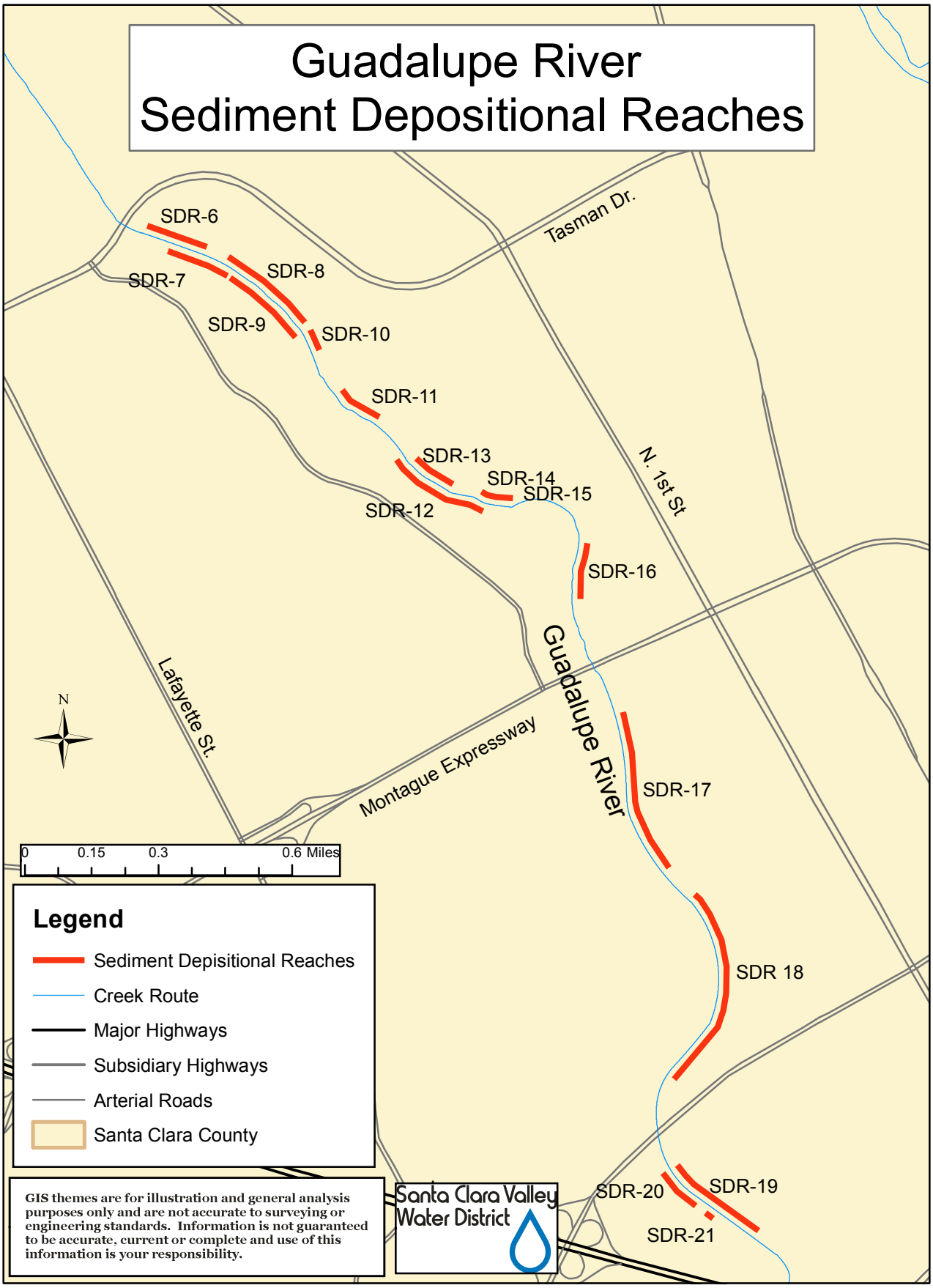

Figure 5-1. Guadalupe River Sediment Depositional Reaches

TABLE 5-1
Key Best Management Practices for Sediment Removal

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 will also be required. 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 to protect water quality. 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 located 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 in these areas, the channel will be graded so that the transition in 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 channels, stream gauges, outfalls, culverts, flap gates, tide gates, grade control structures, bridges, fish ladders, and fish screens shall be characterized in accordance with Valley Water's Sediment Characterization Plans for the Program Renewal (Attachment E). 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.

5.4 PROGRAM LIMITS FOR SEDIMENT REMOVAL ACTIVITIES

There is no limit to the number of sediment removal projects that may occur in a single year. A separation of 500 feet between sediment removal work sites is required.

5.4.1 Modified Channels

Sediment removal projects in modified channels must comply with quantitative objectives established by the MGs (where developed), as identified in Section 3.7. Sediment removal in modified channels will not exceed 5,000 linear feet for individual projects. The amount of sediment removed may not exceed the established project as-builts or LOS.

5.4.2 Unmodified Channels

Sediment removal projects in unmodified channels will comply with quantitative objectives established by the MGs, where MGs have been developed. The triggers and the process for assessment and analysis of inspection results described in Section 5.1 will be used to evaluate the work objectives. Sediment removal in unmodified channels will not exceed 300 linear feet for individual projects. When a sediment removal project involves a combination of modified and unmodified channel types, the individual sediment removal project limits (5,000 feet for modified and 300 feet for unmodified) shall be applied to each portion of the combined project.

Sediment removal from unmodified channels must be associated with a facility or human-made structure (e.g., bridge, outfall, gauge, or grade control). One or more portions of the sediment removal reach must be located 100 feet or less from the structure or facility to be considered “associated.” The amount of sediment removed may not exceed the established project as-builts or LOS.

Table 5-2 summarizes the SMP-3 sediment removal limits by channel type.

TABLE 5-2
SMP In-channel Sediment Removal Limits

Channel Type	Individual Project Limit (linear feet)	Other Requirements
Modified Channels	5,000	Must be at least 500 feet away from other in-channel sediment removal project sites. Comply with quantitative objectives in MGs as applicable.
Unmodified Channels	300	Must be within 100 feet of associated facility (e.g., bridge, outfall, gauge, grade control) Must be at least 500 feet away from other in-channel sediment removal project sites. Comply with quantitative objectives in MGs as applicable.

Exceptions

Valley Water may request that BCDC, CDFW, RWQCBs, NMFS, USFWS, and USACE review projects to waive the per-project limits for sediment removal. Valley Water will submit waiver requests as part of the NPW. The agencies will endeavor to respond to the waiver requests during the NPW review period.

For waiver requests that may affect federally listed species, Valley Water will submit waiver requests to NMFS and USFWS at the same time that requests are submitted to the other agencies. The agencies will endeavor to review all waiver requests during the NPW approval process. Each applicable agency must approve waiver requests before Valley Water can proceed.

Waiver requests may include the following:

1. A narrative description of the stream. This should include known information on volume and duration of flood flow events; approximate length, width, and depth of the waterbody and observed characteristics associated with an OHWM (e.g., bed and bank, wrack line, or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the adjacent areas (e.g., wetland, non-wetland); surrounding land uses; water quality; issues related to cumulative impacts in the watershed; and any other relevant information.

2. An analysis of the potential impacts to the waterbody associated with the sediment removal project.

3. An analysis of the potential impacts to special-status plants or animals associated with the sediment removal project.

4. Measures taken to avoid and minimize losses to waters of the U.S./State, including alternate methods of constructing the proposed activity(s), and the mitigation approach describing how any unavoidable impacts are proposed to be offset.

5. A description of how the activity meets the as-built condition of any prior capital improvement project and how the activity provides independent utility if it requires a waiver.

The MGs, where developed, may provide a basis for the information to be used in items 1 through 5, above.

As stated by BMP SED-5, sediment characterization is generally required for all sediment removal projects. However, in some cases for minor maintenance sediment removal (< 25 cubic yards [cy]), Valley Water may stockpile the sediment from multiple projects together and test them in aggregate prior to determining what is done with the sediment. Waivers for sediment characterization may be requested from the RWQCB Executive Officer. Valley Water will provide the following information: (1) a narrative discussion explaining the justification for waiving sediment characterization, which may include, but need not be limited to, interpretation of existing historic sediment characterization data for the project reach and/or entire stream channel;
(2) project-specific information, including location of the sediment removal project,

stream length where sediment will be removed, and estimated volume of sediment to be removed; and (3) sediment reuse information, including location of reuse, sediment reuse purpose, type of reuse (foundation or surface), and volume of sediment to be reused.

To ensure that SMP projects are unconnected, single, and complete actions and not part of a larger action that will exceed the SMP's per-project size and placement limits, each project must demonstrate independent utility. An SMP project will be considered to have independent utility if it would be constructed absent the construction of other projects in the area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate, single, and complete projects with independent utility. As noted above, a separation of 500 feet between in-channel sediment removal sites is required.

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CHAPTER 6. BANK STABILIZATION

6.1 PURPOSE

Bank stabilization involves the repair and stabilization of eroding channel banks, beds, and levees to re-establish a stable bank, prevent overbank flooding, protect the channel's flood conveyance capacity, minimize additional sediment input to the channel, and reduce the risk of further erosion. Stabilizing banks and minimizing bank failure also protects water quality, riparian habitat functions and values, beneficial uses, and existing infrastructure, including utilities, maintenance roads and/or trails, and adjacent properties.

Channel bank and bed erosion often occurs during or following major storm events. A combination of sustained high water levels, increased flow velocities, and reduced strength of soil bank material can lead to erosion of stream beds and banks. Bank erosion can lower stream bank elevations, particularly on levees, and thereby increase flood risk to adjacent properties. Eroded stream banks can also increase turbidity, degrade water quality, and lead to downstream sediment deposition that may further reduce conveyance capacity and increase flood risk. Additionally, bank erosion may cause loss of vegetation and soil; damage private or public property; and affect trails, access roads, and utilities.

The approach to conducting bank stabilization activities is consistent with the annual assessment and prioritization process, triggers, and Maintenance Guidelines (MGs) described below.

6.1.1 Assessment and Prioritization Process

Valley Water staff conduct regular field inspections and subsequent desktop analysis to identify bank repair sites determined to be of moderate to high risk to public safety, water quality, habitat values, and/or existing infrastructure. Sites with the highest maintenance priority are submitted for work approval in the annual NPW.

Inspections

Valley Water staff regularly inspect channel facilities to identify bed and bank erosion areas that require evaluation. Inspectors then document the sites with photographs; identify possible causes; record site proximity to existing infrastructure, utilities, and public or private property; and add other relevant information before providing inspection data to technical staff for further evaluation.

Assessment and Analysis of Inspection Results

Technical staff review inspection results to determine which areas require additional investigation or collection of field data to assess the following:

- The proximity of the erosion site to adjacent private and public structures;
- Whether the erosion is compromising critical maintenance access;
- Whether scour characteristics show the potential for a larger failure;
- Whether Valley Water has fees, easements, or agreements with other parties on the property;
- Whether the area is unstable or experiencing rapid change/erosion, showing a potential for substantial change; and
- Whether an erosion site affects a completed capital improvement project (CIP) or adjacent public infrastructure.

When conditions at a given erosion site meet one or more of the maintenance triggers described below, staff develop a plan to stabilize the site. Evaluation of the site and selection of the repair method involve the collaborative efforts of Valley Water engineers, biologists, vegetation program specialists, and field construction staff to ensure impacts are minimized and stream functions and values are maximized.

6.1.2 Triggers

Bank stabilization maintenance activities are triggered when streambank conditions meet any of the following criteria:

- Cause or could cause significant damage to property and infrastructure (e.g., utilities, access roads, and/or trails) owned by Valley Water or adjacent property owners;
- Create or could create a public safety concern, including an increased flooding risk; and/or
- Cause or could cause in-channel sedimentation and/or affect water quality and other beneficial uses such as riparian habitat and recreational uses.

When Valley Water's staff inspection and engineering analysis determines that conditions at a specific erosion site meet one or more of the maintenance triggers, staff develop a plan to stabilize the site. The plan is based on the parameters and considerations described in Section 6.2 and the descriptions of bank stabilization techniques in Attachment D, *Bank Stabilization Methods*.

6.2 TREATMENT SELECTION

Depending on conditions, maintenance triggers, MGs, and other site assessment processes, as discussed in Chapter 3, Valley Water considers a wide range of potential

bank repair treatments for each bank stabilization site. Table 6-1 summarizes approved bank stabilization treatments. Attachment D provides more detailed information for each treatment type. For information regarding mitigation of these bank stabilization treatments, see Chapter 10, *Mitigation Program*.

TABLE 6-1
Bank Stabilization Methods

I.D. No.	Method[1]	Suggested Slope[2]	Flow Velocity (feet per second)[2]	Hardscape[3,4], Softscape, or Hybrid
1	Earth Repair	2:1 or flatter	≤ 6	Soft
1A	Earth Repair with Buried Rock	1.5:1 or flatter	≤ 6	Soft
1B1	Earth Repair with Rock Base Vegetated	2:1 or flatter for earth repair section 1.5:1 or flatter for boulder section	≤ 6	Hybrid
1B2	Earth Repair with Rock Base Not Vegetated	2:1 or flatter for earth repair section 1.5:1 or flatter for boulder section	≤ 12	Hard
2	Live Construction	2:1 or flatter	≤ 6	Soft
2A1	Live Construction with Boulder Base	2:1 or flatter for live construction 1.5:1 or flatter for boulder section	≤ 6	Hybrid if rock area is vegetated
2A2				Hard if rock area is not vegetated
2B	Live Construction with Log Base	2:1 or flatter for live construction 1:1 or flatter for log base section	≤ 15	Soft
3	Contour Wattling	2:1 or flatter	≤ 6	Soft
3A1	Contour Wattling with Boulder Base	2:1 or flatter for contour wattling area 1.5:1 or flatter for boulder section	≤ 6	Hybrid if rock area is vegetated
3A2				Hard if rock area is not vegetated
3B	Contour Wattling with Log Base	2:1 or flatter for contour wattling area 1.5:1 or flatter for log base section	≤ 15	Soft

I.D. No.	Method[1]	Suggested Slope[2]	Flow Velocity (feet per second)[2]	Hardscape[3,4], Softscape, or Hybrid
4	Brush Mattress (Brush Layering)	2:1 or flatter	≤ 6	Soft
4A1	Brush Mattress (Brush Layering) with Boulder Base	2:1 or flatter for brush mattress 1.5:1 or flatter for boulder section	≤ 6	Hybrid if rock area is vegetated
4A2				Hard if rock area is not vegetated
4B	Brush Mattress (Brush Layering) with Log Base	2:1 or flatter for brush mattress 1:1 or flatter for log base section	≤ 15	Soft
5	Surface Matting (Erosion Mats)	2:1 or flatter	≤ 12	Soft
5A	Surface Matting (Erosion Mats) with Boulder Base	2:1 or flatter for erosion mat 1.5:1 or flatter for boulder section	≤ 6 if boulders are planted with live stakes 12 if boulders are not planted	Hybrid
5B	Surface Matting (Erosion Mats) with Log Base	2:1 or flatter for erosion mat 1:1 or flatter for log base section	≤ 15	Soft
6	Add Rock to Invert	N/A	For incised channels or scour holes downstream of concrete-lined areas	Hard
6A	Rock Cross Vanes	N/A	For channel types “B” and “F” of Rosgen’s stream classification	Hard
6B	Root Wads and Boulders	N/A	≤ 10	Hybrid
6C	Live Log Crib Walls	Up to 0.25:1	6 to 12	Soft
6D	Log Revetment	Up to 0.25:1 or flatter	≤ 15	Hybrid
6E	Bendway Weirs	N/A	Thalweg management	Hard

I.D. No.	Method[1]	Suggested Slope[2]	Flow Velocity (feet per second)[2]	Hardscape[3,4], Softscape, or Hybrid
7	Cellular Confinement System	Up to 0.5:1	≤ 6	Hard
8	Rock Blanket	Up to 1.5:1; 2:1 preferable	≤ 15	Hard
8A	Boulder Revetment	Up to 1:1; 2:1 preferable	≤ 6 if boulder joints planted ≤ 15 if not planted	Hard
8B	Boulder Revetment with Soil and Vegetation	Up to 1:1; 2:1 preferable	≤ 6	Hybrid
9	Articulated Concrete Blocks	0.75:1 up to 3:1	≤ 15 for closed ACBs[5] ≤ 6 for open ACBs[5]	Hard
9A	Articulated Concrete Blocks with Planted Areas	Up to 1:1	≤ 15 for closed ACBs[5] ≤ 6 for open ACBs[5]	Hybrid
10	Concrete Crib Walls	Up to 1:1	6 to 15 depending on size of crib wall's openings	Hard
11	Sacked Concrete	Up to 0.5:1	≤ 15	Hard
12	Gunite Slope Protection	Up to 0.1:1	≤ 15	Hard
13	Soldier Piles	Up to 0:1	≤ 15	Hard

[1] When synthetic geotextile matting is utilized as part of a bank stabilization method, the area of synthetic geotextile use would be considered hardscape (3:1 ratio).

[2] Slopes and velocities are intended to be used as guides and are not prescriptive. Methods may be adjusted based on site conditions and other factors.

[3] In-kind repairs on non-anadromous salmonid channels that do not change the character, scope, or size of the original structure; occur in the same project footprint; are not extending rock any higher or wider than the existing condition; and are not bringing in new fill are not subject to regulatory review. In-kind rock repairs on anadromous salmonid channels will be included in the NPW.

[4] Impacts to lower streambank environments below the OHWM due to placement of hardened materials will be mitigated through the purchase and application of mitigation credits or the implementation of restoration projects that result in created or restored habitats, based on watershed needs and priorities. VW will also evaluate opportunities to enhance or create habitat values and functions in the mid and upper bank zones where rock has been placed at the toe of the slope.

[5] ACB: articulated concrete blocks.

Bank stabilization methods are described as hardscape, softscape, or hybrid depending upon the degree of bank hardening involved. As shown in Table 6-1, softscape methods may include biotechnical treatments that emphasize vegetation and earthen banks; these methods are typically used in lower-velocity, grass-lined channels and more natural creek settings or where the creek conditions can tolerate higher hydraulic roughness. The most common softscape approach is to reconstruct the slope with earthen materials and revegetate it. 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 (see Chapter 10, Table 10-5, Typical Revegetation Palette) or other instream features to further enhance and restore riparian and channel habitat. For sites with higher tolerances for hydraulic roughness, staff will review adjacent habitat conditions to determine softscape approaches that best suit the area.

Valley Water considers hybrid or hardscape approaches for specific locations that require a higher level of resistance to erosive shear forces. For example, the outer bends of channels – where flow velocities and shear stresses are greater – are common locations for using hardscape elements. Hybrid methods are typically earthen bank repairs that include a combination of vegetation and rock material (e.g., brush mattress with a boulder base). Softscape approaches shown in Table 6-1 can be combined with the selective use of rock to provide added shear strength. Hardscape methods may include concrete blocks, sacked concrete, rock, or other hardened materials. To minimize adverse environmental effects, Valley Water first considers softscape approaches or biotechnical bank stabilization techniques, where feasible and appropriate. However, due to certain site conditions (e.g., steep slope, limited right-of-way width, strong hydraulic forces), hybrid or solely hardscape solutions may be determined to be more suitable.

When determining the appropriate treatment approach, staff consider site-specific soil conditions, channel and bank scour velocities, slope stability, channel form/position, site constraints, and other active hydraulic and geomorphic conditions. The cause of the bank failure (e.g., over-land runoff, burrowing animals, undersized culvert upstream) and type of failure (sheered slope, undercut bank, rotational slump) are also critical considerations when determining the appropriate treatment approach.

For the SMP, rock may be placed in-channel based on the hydraulic analysis. The bank stabilization measures included in Attachment D generally require the rock to be placed up to the elevation of the OHWM.[1]

Staff also evaluate bank stabilization projects for the inclusion of additional wood features beyond those in the chosen bank design. Where possible and feasible, additional wood features may be included in projects located in salmonid channels; this

[1] The OHWM is defined by the USACE as the line on the shore or bank established by the fluctuations of water. The OHWM is typically indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

also supports the SMP's preferred mitigation approach. (See Chapter 10 for more information.)

When an existing hardened bank site is evaluated for stabilization work, staff assess whether a softscape treatment method could be used instead of a hardscape, in-kind replacement. When the site will support it, soft or hybrid bank stabilization measures may replace hardscape bank treatments. As described in Chapter 10, Section 10.6.5, removal of concrete structures or fragments from below the OHWM may serve as mitigation for bank stabilization impacts or other SMP-related impacts if the concrete structure is replaced with softscape in such a manner that the project would result in a net improvement for aquatic habitat.

6.3 WORK ACTIVITIES

Work activities at bank stabilization sites typically involve site preparation, recontouring and installation of bank repair treatment, compaction and grading of earth and soil, vegetation planting, and other on-site restoration activities.

During site preparation, the eroded or destabilized bank site is cleared of vegetation and loose soil is stockpiled locally for later use. Bank repair treatment materials are also staged locally. In some cases, dewatering is needed to prepare the site for construction.

Work sites are accessed by means of existing maintenance roads and/or ramps; temporary dirt ramps may be constructed as needed to access the project site. Valley Water–maintained channels usually have one access road along the top of the bank on one side of the channel. Some channels may have one or more lower maintenance roads along a terrace.

Selective clearing of shrubs or trees on the banks may be necessary to provide equipment access to the work site and to create a safe work area. When bank repair work requires activities in the channel bottom, all work is performed in dry conditions or within an area dewatered by a flow diversion system.

Equipment used for bank stabilization activities typically includes excavators, bulldozers, cranes, front-end loaders, dump trucks, water trucks, pumps, generators, compactors, and hand--operated compactors. Staging typically occurs on adjacent access roads or lands, if available, or within the work area. Where possible, soil, rock, riprap, and other construction materials are staged in areas that have been previously disturbed, such as service roads and turnouts.

For installation of hardscape solutions, soil and material from the failed bank that will not be reused is removed and the bank is reconstructed with back-filled soil and the appropriate hardscape material according to the project design. For softscape and hybrid bank stabilization projects, staff install vegetation according to design specifications. This may include willow plantings, brush mattresses, root wads, and other plantings from species listed in Table 10-5.

Bank stabilization repairs are completed with soil compaction, finish grading, and planting and/or other on-site restoration practices. Once the bank repair work is completed, the banks are contoured to match the adjacent bank slope to the extent

possible. If healthy riparian vegetation is present adjacent to the bank failure site, care is taken to minimize disturbance of such vegetation.

6.3.1 Project Requirements

1. Staff will perform pre- and post-project assessments on anadromous salmonid channels to assess impacts to gravels, instream habitat complexity features, and large woody debris, and suitable mitigation approaches will be developed as required (see Chapter 10, Section 10.6.6, Salmonid Habitat Restoration Projects).

2. Bank stabilization activities can be performed in any creek under Valley Water jurisdiction, wherever property rights authorize Valley Water to work, or as approved by the Valley Water Board of Directors.

3. Notification requirements for bank stabilization projects are outlined in Chapter 11, Section 11.2.2, Agency Notification and Review Process. Staff will provide hydraulic analysis results and a description to support hardscape designs.

4. In-kind rock repairs on anadromous salmonid channels that require dewatering will be included in the NPW. On channels that do not support anadromous salmonids, in-kind repairs that occur in the same project footprint; do not change the character, scope, or size of the original structure; do not extend rock any higher than the existing condition; and do not bring in new fill are not subject to regulatory review.

5. Water quality monitoring is performed per the Water Quality Monitoring Plan (Attachment E), and all excavated sediment is tested per the Sediment Characterization Plan (Attachment F).

6. Valley Water relies on weather forecasts to prepare for anticipated significant rainfall and monitors the 72-hour National Weather Service (or local vendor) forecasts year-round to allow time for winterization[2]. If significant rainfall is indicated in the coming 72-hour forecast window, then maintenance work that may result in sediment runoff to the channel is stopped to allow adequate time to complete erosion control measures.

7. Every bank stabilization project is winterized after completion. Winterization is completed prior to the occurrence of significant rainfall.

Basic guidance for winterization procedures (see Attachment A, Section E, Post-Project Restoration Measures) includes the following:

- Direct runoff away from disturbed areas.

[2] Winterization is the process of preparing and maintaining work sites with adequate BMPs to prevent erosion and sediment transport and to protect water quality during the rainy season.

- Retain existing vegetation to the extent possible.
- Contour grading consistent with the surrounding terrain.
- Prepare temporary drainages and outlets.
- Grade/excavate outside of the rainy season.
- Minimize the length and steepness of slope.
- Stabilize disturbed areas by mulching and revegetation (e.g., hydromulching, hydroseeding, hydraulic matrices, and blankets).
- Use dissipating measures to keep runoff velocities low.
- Trap sediment on site.
- Inspect, log, and maintain control measures after each storm.

6.4 IMPACT AVOIDANCE AND ACTIVITY-SPECIFIC BMPS

Table 6-2 lists BMPs that guide implementation of bank stabilization projects to avoid impacts on biological and cultural resources. These BMPs are implemented by the field crew and supervisor. Pre-planning general (GEN-) BMPs are also implemented as applicable to specific site conditions and resources.

TABLE 6-2
Key Best Management Practices for Bank Stabilization

BMP Number	BMP Title	BMP Description
BANK-1	Bank Stabilization Design to Prevent Erosion Downstream	To 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 that contour the repaired site to conform to adjacent areas upstream and downstream to prevent potential erosion impacts.
BANK-2	Concrete Use Near Waterways	Fresh concrete will be isolated until it no longer poses a threat to water quality, using the following appropriate measures: 1. Wet sacked concrete and poured concrete will be excluded from the wetted channel for a period of 30 days after it is installed/poured. During that time, the concrete will be kept moist, and runoff from the concrete will not be allowed to enter a stream. Containment structures will be installed to control the placement of wet concrete and to prevent it from entering the channel outside of those structures. 2. Commercial sealants (e.g., Deep Seal, Elasto-Deck Reservoir Grade) may be applied to the poured concrete surface where it may be difficult to exclude water flow for a long period of time. 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 as a location for cleaning out concrete transit vehicles. 5. Temporary concrete washout facilities will be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations. Concrete washouts may be contained in settling basins dug into the ground, raised and contained structures,

BMP Number	BMP Title	BMP Description
		trailers, etc. Concrete waste will be removed and disposed of appropriately. 6. Where slurries containing portland cement concrete or asphalt concrete are generated (such as from saw cutting, coring, or grinding), slurry wastes will not be allowed to enter storm drains or watercourses and will be removed and disposed of appropriately.
BANK-3	Bank Stabilization Post-Construction Maintenance	Valley Water may maintain or repair bank stabilization projects that are less than 2 years old and damaged by winter flows. Valley Water will notify the regulatory agencies 24 hours prior to beginning the work. The work will be reported as part of the Annual Summary Report submitted by January 31 of each year or, if necessary, the subsequent year. Appropriate BMPs will be applied during maintenance repairs.

6.5 PROJECT AND PROGRAM LIMITS FOR BANK STABILIZATION ACTIVITIES

6.5.1 Per-Project Limits

For individual projects, softscape methods may not exceed 500 linear feet. Hardscape and hybrid methods may not exceed 300 linear feet. No method may exceed 0.5 acre below the OHWM per individual project. The per-project limits are intended to ensure minimal effects on aquatic and other sensitive biological resources.

Bank Stabilization Annual Limit

There is no limit to the total number of bank stabilization projects that may occur in a single year. The annual bank stabilization limit is 1 linear mile of channel.

Hardscape areas that are replaced with softscape or hybrid bank stabilization methods may exceed the per--project limits for maximum length and will not be counted toward the annual maximum length of 1 linear mile. Hardscape areas replaced with softscape or hybrid methods may provide a mitigation credit that can be applied to other projects requiring compensatory mitigation; however, the permitting agencies would need to approve this approach on a project-by-project basis.

To ensure that SMP projects are unconnected, single and complete actions, and not part of a larger action that will exceed the SMP's per-project size and placement limits, each project must demonstrate independent utility. An SMP project will be considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate, single and complete projects with independent utility. A separation of 250 feet between bank stabilization repair sites is required.

6.5.2 Exceptions

Valley Water may request that BCDC, CDFW, RWQCBs, NMFS, USFWS, and USACE review projects to waive the per-project limits for bank stabilization activities. Valley Water will submit waiver requests as part of the NPW. The agencies will endeavor to respond to the waiver requests during the NPW review period.

For waiver requests that may affect federally listed species, Valley Water will submit waiver requests to NMFS and USFWS at the same time that requests are submitted to the other agencies. The agencies will endeavor to review all waiver requests during the NPW approval process. Each applicable agency must approve waiver requests before Valley Water can proceed.

Waiver requests may include the following:

1. A narrative description of the stream, including description of past flow or other events that necessitated the repairs; the approximate length, width, and depth of the waterbody and observed characteristics associated with the OHWM (e.g., bed and bank, wrack line, or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the adjacent areas (e.g., wetland, non-wetland); surrounding land uses; water quality; issues related to cumulative impacts in the watershed; and any other relevant information.

2. An analysis of the potential impacts to the waterbody associated with the bank stabilization project.

3. An analysis of the potential impacts to special-status plants or animals associated with the bank stabilization project.

4. Measures taken to avoid and minimize impacts to waters of the State or U.S., including alternate methods of constructing the proposed activity(s), and the mitigation approach describing how any unavoidable impacts are proposed to be offset.

5. A description of how the activity meets the as--built condition of any prior CIPs and how the activity provides independent utility if it requires a waiver.

The MGs, where developed, may provide a basis for the information to be used in items 1 through 5 above.

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CHAPTER 7. MANAGEMENT OF ANIMAL CONFLICTS

7.1 PURPOSE

Animal activity sometimes conflicts with the integrity and maintenance of Valley Water flood control facilities (e.g., levees, creeks, structures). Some examples of the types of conflicts include the following:

- animals burrowing into levees and creek banks, which may weaken the structures, leading to sloughing, slumping, or failure;
- animals foraging on revegetated mitigation sites, which can reduce the health and vigor of plants or even denude these areas; and
- animals being territorial and/or defensive of specific resources or locations, interfering with work activities or requiring Valley Water to postpone work activities.

Valley Water performs animal conflict management activities to protect its facilities, mitigation sites, and active work sites. USACE levee inspections may also trigger the need for animal conflict management activities.

7.1.1 Triggers

Valley Water may implement animal conflict management activities when any of the following conditions are present:

- Visual observations indicate damage from animals burrowing into levees or creek banks or undermining other Valley Water flood control facilities and/or lands;
- Visual observations show excessive animal foraging on mitigation sites;
- Visual observations of animals in a work site raise concerns for worker safety, such as when bees or wasps are present; and/or
- Vegetation management or biological controls are needed that would take time to be effective and animal conflict measures would be beneficial in the near term.

7.1.2 Assessment and Work Process

Two main processes identify the triggers for animal conflict management work: (1) field inspections by watershed staff and (2) requests for services by internal staff or external entities. Field inspections involve watershed staff logging animal conflict issues (mainly burrowing rodent activities) during their quarterly or annual inspections. Staff identify the areas where animal damage has caused or has a high potential of causing a bank or levee failure. Field inspections of proposed work areas may also identify the presence of potentially harmful wildlife species that pose a safety hazard to the general public and/or Valley Water staff. Field inspections of mitigation sites may identify excessive animal foraging on revegetation and the need for preventive measures, such as revegetation

fencing or caging. Knowledge of previous nesting activity in a proposed work area that could prevent a project from being constructed may trigger a request for an evaluation of preventive nesting measures, such as bird barrier netting on bridges or structures.

Requests for services generated by internal staff or external entities are sent to watershed staff and then followed with a field inspection to confirm work and determine which activities to implement. Activities are prioritized at the watershed level based on the risk of flooding or failure. Rodent activity on levees, for example, is a high management priority and receives immediate and ongoing attention until burrow activities are no longer evident. For stream banks or other channel infrastructure, priority is given to areas that show damage or evidence of multiple rodents.

7.2 ANIMAL CONFLICT MANAGEMENT ACTIVITIES

Animal conflicts are managed by the following means: maintaining a safe work environment, integrated pest management (biological control), physical alterations, bird nest deterrence, bat inspection and exclusion, habitat modification through vegetation management, live (non-lethal) trapping, chemical repellents, and fumigation. These methods may effectively manage the area by addressing different life stages and activities of the target animals.

7.2.1 Maintaining a Safe Work Environment

Field conditions and the types of animals encountered vary seasonally, geographically, and by work activity. Swarms of wasps and bees can be in trees, while arachnids, flies, and mosquitoes may live around culverts and bridges near sources of water. Honeybee colonies and swarms are captured and relocated by local apiarists at Valley Water's request.

7.2.2 Integrated Pest Management (Biological Control)

Raptor nest structures and perches may be installed and maintained in some areas to encourage natural predation of burrowing rodents such as ground squirrels, gophers, and moles. Valley Water may install artificial raptor nest structures (e.g., barn owl nest boxes) in areas of burrowing rodent activity and outside of potential habitat for sensitive species such as California Ridgway's rail, burrowing owl, and salt marsh harvest mouse. Vegetation management, sediment reuse, road grading, or other SMP activities may be conducted near occupied artificial raptor nest structures following on-site biological evaluation and adherence with BMP GEN-6 Protection of Nesting Birds. Maintaining artificial nest structures typically includes annual cleaning, structure repair or relocation, and nest monitoring.

7.2.3 Physical Alterations

Physical alterations may include minor alterations that do not change the facility's size or functionality but enhance Valley Water's ability to conduct work. Physical alterations may also be conducted to reduce or eliminate the effects of burrowing animals. Erosion control BMPs are implemented to avoid water quality degradation. Examples of physical alterations include the following:

- **Surface Compaction of Levee Faces.** Surface compaction involves using heavy equipment (i.e., crawler tractors, rollers/compactors, vibratory plates) to consolidate, recompact, or harden the levee surface. Compaction is achieved by driving heavy equipment up and down or across the levee slope. Reconstruction of a levee slope (i.e., removal and replacement of channel banks using compacted soil) is more extensive and is considered a bank stabilization activity consistent with the requirements described in Chapter 6, *Bank Stabilization*.

- **Filling Burrows with Soil or Slurry Material.** Filling burrows with slurry consists of using a truck- or trailer-mounted mixing machine to dispense the slurry through a hose into adjacent rodent burrows. This relatively small piece of equipment provides mobility and flexibility and can mix up to a few cubic yards at any given time. A typical operation includes a truck or flatbed where bags of slurry mixture can be stored and transported, a trailer-mounted mixing/pumping machine, and a water truck. At the work site, bags of dry slurry material are hand-loaded into the mixing machine and water is added until the appropriate consistency is reached. The material is then pumped through a hose into the rodent burrow until the burrow is filled. Viscosity of the slurry mixture is critical in properly filling the burrows and varies depending on soil moisture at the burrow hole location. If the burrow is within the potential range of a sensitive species that utilizes burrows, a qualified biologist must inspect the burrows for presence of that sensitive species using methods appropriate to the species in question prior to the start of work. In some cases, systematic excavations with a small backhoe or hand tools may be necessary to ensure that there is no impact to sensitive species.

- **Placement of Physical Barriers.** Materials such as geotextile mats, chain-link fencing (installed flush with the ground surface or buried), and erosion control blankets (on the ground surface) may be placed above OHWM for up to 300 linear feet to inhibit animal burrowing. Placement of physical barriers consists of preparing an area for barrier installation, installing the barrier, and providing follow--up maintenance as needed. Site preparation typically includes scraping the barren soil, removing groundcover vegetation (i.e., weeds or grasses), and/or trenching. Geotextile mats, when used, are installed in such a way that the matting will not become exposed at the surface. Equipment used for this operation can include hand tools, tractors, mowers, trenchers and excavators.

  Placement of physical barriers is similar to bank stabilization activities but is limited to the area above OHWM and no more than 300 linear feet per site. This area may include either inboard or outboard sides of the levee for 300 feet with at least 300 feet of separation from another linear installation of physical barriers on the same slope and barriers are only installed on one side of levee slopes. Physical barriers are installed in an alternating pattern, such that inboard and outboard levee faces do not have barriers along the same levee stationing. Staff monitor the site during regular inspections to assess barrier effectiveness and prevent unforeseen adverse impacts. Materials used for winterization, to prevent erosion, and to protect water quality are similar to those used on bank stabilization projects (see Section 6.3.1 for details).

7.2.4 Bird Nest Deterrence for Work Area Structures

Netting on bridges or structures such as stream gauges and culverts may be installed and maintained to prevent birds such as swallows or black phoebes from nesting. Staff may remove the mud nests of these birds on structures prior to nest completion. Valley Water staff do not remove active nests and, similar to other maintenance practices, minimize impacts to nesting birds by conducting nesting bird surveys and implementing avoidance measures after the deterrence structures have been installed.

7.2.5 Bat Inspection and Exclusion – Upper Llagas Creek Flood Protection Project

The Upper Llagas Creek Flood Protection Project includes a high-flow bypass tunnel. Due to concerns expressed by the Central Coast RWQCB about the potential for bat feces to impact water quality, a qualified biologist will inspect this tunnel for the presence of bats. If bats are detected during this inspection, Valley Water staff will install bat exclusion measures, such as one-way mesh exits that allow bats to leave but not return to the tunnel, as needed.

7.2.6 Habitat Modification Through Vegetation Management

Modifying habitat through vegetation management is a method to influence animal behavior. Low-growing herbaceous vegetation may be cleared prior to the avian nesting season[1] to minimize nesting in the specific targeted area. Likewise, mowing vacant or fallow lands adjacent to flood protection levees can decrease future food sources and habitat for burrowing rodents. Limiting available forage areas adjacent to key Valley Water flood control facilities may also reduce burrowing rodent populations. Habitat modification through vegetation management typically includes the following practices:

- Managing vegetation growth to prevent individual species from taking up residence, burrowing, or nesting;
- Maintaining vegetative barriers to reduce animal occupancy at a site; and
- Changing a plant palette to reduce habitat suitability or desirability.

7.2.7 Live (Non-lethal) Trapping

Live (non-lethal) trapping may take place year--round to target ground squirrels. Wire cage live traps are baited with untreated bait. Live traps have openings no smaller than 2 inches by 1 inch, which is large enough to allow mice and other smaller species to escape the trap. Live traps are checked daily. Ground squirrels are removed from the site and are humanely euthanized with carbon dioxide gas. Non-target species are released on site as soon as they are detected.

[1] Nesting bird season occurs from January 15 to August 31. Low-growing herbaceous vegetation may be cleared outside of the nesting bird season between September 1 and January 14.

7.2.8 Chemical Repellents

Chemical repellents may be used to deter rodents or other nuisance species, such as rabbits. Repellents may include plants and extracts that target specific species. Examples include peppermint oil, capsaicin, pepper, cinnamon, or cayenne sprinkled in areas with frequent rodent activities.

7.2.9 Fumigation

Fumigation is implemented only when other animal conflict management activities are inadequate to feasibly address a conflict, such as when ongoing population control of burrowing mammals is required. California ground squirrels and gophers are the most targeted species.

Fumigation methods are prescribed by a Pest Control Advisor in coordination with a Valley Water staff biologist. Compliance with species and habitat protections is managed by a qualified biologist in accordance with applicable BMPs in Attachment A, Section F, Management of Animals Conflicts. Fumigation methods comply with County Agricultural Commission requirements.

Fumigant Methodology

Fumigants are used when there is sufficient moisture in the soil to prevent the gases from diffusing out of the burrow. In Santa Clara County, fumigants are typically used between late January and early May. In active burrow areas, an initial fumigant treatment is conducted. One to two weeks later, burrows that continue to show signs of activity are treated again. The types of fumigants that may be used are described below.

- **Gas cartridges (smoke bombs):** Gas cartridges consist of a mixture of sodium nitrate, charcoal, and sawdust compressed in a tube. Cartridges are lit with a fuse and placed directly into the burrow, which is then sealed with soil. The cartridge produces a carbon monoxide gas that spreads through the burrow and asphyxiates the animals within. If smoke is observed from any other burrows (indicating interconnection of burrows), those burrows are sealed as well.

- **Aluminum phosphide:** Aluminum phosphide is a colorless gas with a pungent odor (University of California [UC] BMPs for California Ground Squirrel Control, 2011). Two to four aluminum phosphide tablets are placed directly into the burrow. The burrow entrance is then plugged with crumpled newspaper to prevent soil from covering the tablets, and then sealed with soil. The moisture in the burrow activates the fumigant, which produces a phosphine gas that spreads through the burrow and is lethal to the enclosed animals.

Safety

Label use restrictions are followed for all fumigants used. Fumigants are not to be used near dry grasses or other flammable material, or near buildings.

7.2.10 Coordination with Local, State, and Federal Agencies

Valley Water may contract with or request assistance from local, state, or federal agencies to capture nuisance animals such as feral cats, stray dogs, red fox, opossum, or skunks.

7.2.11 Procedures for Avoiding Impacts on Sensitive Species During Animal Conflict Management Activities

When conducting animal conflict management activities, the workflow process involves the following steps:

1. **Determine the Appropriate Animal Control Method.** The control method is selected based on the target animals' life cycles and the seasonal efficacy of methods employed, so that adverse effects to special--status species can be avoided.

2. **Desk Audit.** A Valley Water wildlife biologist conducts a desk audit to determine whether suitable special-status species habitat is present in or adjacent to a proposed maintenance activity site.

3. **Recommend Appropriate BMPs.** If the Valley Water wildlife biologist determines that a special-status species could be present in the work area, avoidance and minimization measures are incorporated into the work order requirements in accordance with the applicable BMPs (see Section 7.3, below).

7.3 IMPACT AVOIDANCE AND ACTIVITY-SPECIFIC BMPS

Of the methods for managing animal conflicts, lethal controls have the highest potential for environmental and biological impacts. Therefore, BMPs for animal conflict management focus on such controls. The application area for lethal controls is identified during the annual planning process (see the Pre-Project Planning and General BMPs in Attachment A) and is reviewed by a qualified wildlife biologist. Species habitat areas are identified based on SMP potential range map areas, updated California Natural Diversity Database (CNDDB) occurrence records, and known local biological information.

Table 7-1 lists BMPs that provide specific and detailed guidance applicable to animal conflict management procedures implemented by Valley Water. Fully trained and qualified field crews perform these procedures. In addition, pre-planning general (GEN-) BMPs are also implemented as applicable to the specific site conditions and resources. The full suite of BMPs is provided in Attachment A.

TABLE 7-1
Key Best Management Practices for Animal Conflict Management

BMP Number	BMP Title	BMP Description
ANI-1	Surface Barrier Applications to Prevent Burrowing	Surface barrier applications installed as a method of animal conflict management (e.g., chain-link fencing, woven geotextiles, and other similar materials) will be installed in an area no longer than 300 feet and above OHWM. This area may include either inboard or outboard sides of the levee for 300 feet, with at least 300 feet of separation from another linear installation of physical barriers on the same slope, and barriers are only installed on one side of levee slopes. Surface barrier applications will be installed in an alternating pattern, such that no inboard and outboard levee faces will have erosion control blankets along the same levee stationing.
ANI-2	Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail	No harmful fumigants (e.g., chemicals that would have a risk of secondary effects on owls) will be used under the SMP. No fumigants will be used within the range of the salt marsh harvest mouse (SMHM), California's Ridgway's rail (CRR), or California Black Rail (CBR) as identified on SMP potential range maps. Methods of rodent control within suitable habitat for these species 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 enters the trap to easily escape. All traps will be placed outside of pickleweed areas and above the high tide line.
ANI-3	Burrowing Owl Buffer Zone	In accordance with the CDFW's 2008 *Guidance for Burrowing Owl Conservation*, a 656-yard buffer will be established around known burrowing owl locations, within which no fumigants (including smoke bombs) will be used.
ANI-4	Animal Control in Sensitive Amphibian Habitat	No harmful fumigants (e.g., chemicals that would have a risk of secondary effects on amphibians) will be used under the SMP. Fumigants will not be used within the habitat areas of special-status amphibians. Any live traps will have openings measuring no smaller than 2 inches by 1 inch to allow California red-legged frogs, California tiger salamanders, or foothill yellow-legged frogs to safely exit.
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 will comply with 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, including beaver and gray squirrel, without first obtaining a depredation permit.
HM-4	Posting and Notification for Pesticide Use	Posting of areas where pesticides are used will be performed in compliance with Quality Environmental Management System Document Q751D02 Control and Oversight of Pesticide Use as follows: 1. Posting will be performed in compliance with the label requirements of the product being applied. 2. 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, Valley Water ensures that exposure risk is minimized further by adopting practices that go beyond the product label requirements. 3. 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 Valley Water 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, Valley Water will maintain records of neighbors with specific needs relative to notification before treatment of an adjacent area so that such needs are met.

7.4 PROJECT AND PROGRAM LIMITS FOR ANIMAL CONFLICT MANAGEMENT

Animal conflict management activities involving surface compaction and filling of burrows above OHWM will not exceed 42 linear miles during the period 2027–2036.

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CHAPTER 8. MINOR MAINTENANCE ACTIVITIES

8.1 PURPOSE

Minor maintenance activities are routine, small-scale activities performed to repair and maintain the functionality and operation of Valley Water facilities. Maintenance activities may occur along creeks and at stream gauges. Although these activities may occur throughout the SMP area, they do not change the footprint of any existing facility or structure. Potential environmental impacts for minor maintenance activities are temporary and limited in size and scale, as described in Section 8.2.1, Requirements.

8.2 WORK ACTIVITIES

Minor maintenance activities may include any of the following:

- Minor sediment removal work at outfalls, culverts, flap gates, tide gates, inlets, grade control structures, bridges, and streamflow measuring stations (i.e., stream gauges) to maintain proper functioning of such structures. Minor maintenance work at these facilities is limited to removing 25 cubic yards of sediment per facility. Removal of sediment will not extend farther than 100 feet in any direction from the structure.

- Trash and debris removal work. This includes removal of downed trees or tree limbs, but does not include downed trees that are greater than 12 inches in diameter and longer than 6 feet in salmonid creeks[1]. Downed trees that provide habitat value and do not present a concern for infrastructure, flow conveyance, public safety, access, or other needs will be retained where practical. In some cases, downed trees may be repositioned or modified rather than removed in order to retain habitat values. Trash removal occurring outside of encampment clean-up activities may serve as mitigation and is described in more detail in Chapter 10, *Mitigation Program*.

- Repair and installation of fences and gates, including repairs or installations with minor ground disturbance.

- Grading and other repairs, including adding rock or gravel, recompacting, and resurfacing, to restore the original contour of existing maintenance roads and access ramps. Repair of existing roads includes repair to both upper and lower maintenance roads. Road and access ramp repair may also include adding aggregate material and/or other in-kind materials within the existing roadway or ramp footprint. Minor maintenance repair of lower maintenance roads will not be conducted in circumstances where flowing or ponded water is present on the maintenance road.

[1] Maintenance activities involving downed trees in a salmonid creek or greater than 12 inches in diameter and longer than 6 feet are not considered minor maintenance activities and are described separately in Chapter 9, *Downed Tree Management*.

- Grading of small areas beyond the top of bank to improve drainage and reduce erosion.

- Repair of structures with similar materials within the same footprint (such as replacement of concrete linings, culverts, pipes, valves, or similar structures or repairing a weir, in-stream orifice, or communication pipe). For the purposes of this activity description, “similar materials” refers to materials being replaced in--kind, such that hardscape and softscape facilities (in-kind bank repairs) are replaced with hardscape and softscape materials, respectively. A different type of hardscape may be used to repair existing hardscape; however, in-kind replacement of hardscape is exempt from agency notification only if the replacement would not modify the original design. Hardscape may also be replaced with softscape if practicable (see Chapter 10, *Mitigation Program*).

- Ongoing maintenance of restoration sites, such as maintaining irrigation systems, that is not focused on vegetation management activities described in Chapter 4, *Vegetation Management*. Other ongoing maintenance activities associated with vegetation management at restoration sites, such as weed control and replanting dead or dying plants, are described in Chapter 4, *Vegetation Management*.

- Removal of obstructions, debris, and trash (other than sediment and large woody debris) at structures such as bridges (not to exceed 100 feet upstream and downstream of a bridge), streamflow measuring stations (stream gauges), box culverts, storm drain outfalls, pier noses near bridges, trash booms, drop structures, and tide gates. This work is conducted to maintain proper functioning of these structures. For example, removing obstructions and trash at the Palo Alto tide gate (located at the confluence of Adobe Creek and Matadero Creek) is typically conducted by workers on foot, using a truck-mounted crane or a non-motorized boat.

- Maintenance of fish ladders that are not associated with a diversion. The need to conduct fish ladder maintenance will be determined after completing annual inspections. Routine maintenance of fish ladders typically involves removing accumulated sediment, debris, or algal growth that is impairing the functionality of the facility. Work may also include minor repairs such as repairing loose, broken, or missing components. Table 8-1 identifies fish ladders that may be maintained under SMP-3. Maintenance of fish ladders associated with a diversion is conducted under separate permits.

TABLE 8-1
Fish Ladders Maintained under the SMP

Ladder No.	Ladder Name	Creek	Cross Street	Station From	Station To
PF-0001	Llagas Creek Fish Ladder 1	Llagas Creek	Southside Drive	8779	8845
PF-002	Llagas Creek Fish Ladder 2	Llagas Creek	Southside Drive	10963	11017
PF-003	Llagas Creek Fish Ladder 3	Llagas Creek	Hwy 152	14959	14989
PF-004	Llagas Creek Fish Ladder 4	Llagas Creek	Hwy 152	16292	16312
PF-005	Llagas Creek Fish Ladder 5	Llagas Creek	Hwy 152	17331	17342
PF-006	Llagas Creek Fish Ladder 6	Llagas Creek	Hwy 152	19466	19511
PF-007	Llagas Creek Fish Ladder 7	Llagas Creek	Hwy 152	19684	19732
PF-008	Llagas Creek Fish Ladder 8	Llagas Creek	Hwy 152	19923	19970
PF-009	Llagas Creek Fish Ladder 9	Llagas Creek	Gilman Ave	25674	25697
PF-010	Llagas Creek Fish Ladder 10	Llagas Creek	Leavesley Ave	27959	27989
PF-011	Llagas Creek Fish Ladder 11	Llagas Creek	Leavesley Ave	31718	31745
PF-012	Llagas Creek Fish Ladder 12	Llagas Creek	Leavesley Ave	34433	34452
PF-013	Llagas Creek Fish Ladder 13	Llagas Creek	Bloomfield Ave	35769	35792
SF-012	Stevens Creek	Stevens Creek	Central Expressway	19600	19600
SF-013	Stevens Creek Fremont Ladder	Stevens Creek	Hwy 85	37000	37000
SF-014	Stevens Creek Moffett Ladder	Stevens Creek	Moffett Blvd	16500	16500

Note: Hwy = U.S. Highway.

- Maintenance of trash booms to capture debris, branches, downed trees, and other trash and materials. Valley Water currently manages two trash booms in San Jose (Thompson Creek upstream of Tully Road and Lower Silver Creek downstream of King Road). Valley Water also installed two trash booms in Palo Alto (Adobe Creek at U.S. Highway 101 and Matadero Creek at U.S. Highway 101), which are maintained by the City of Palo Alto. Valley Water is required to operate all four booms in accordance with the Municipal Regional Stormwater NPDES Permit (MRP) (Order R2-2009-0074, NPDES Permit No. CAS612008). The San Jose booms are in the channel year-round and are cleaned 2-3 times per year by hand or using cranes with a basket attachment or claw (depending on the amount of accumulated trash). The Palo Alto trash booms are removed during the wet season (December through April) and are cleaned by hand 2-3 times per year.

- Maintenance of the Palo Alto tide gates includes removal of accumulated debris and trash, cleaning gates, in-kind replacement of minor components that have become corroded or worn, and periodic repainting for corrosion protection. The

Palo Alto tide gates are located at the confluence of Matadero Creek and Adobe Creek.

- Floodwall maintenance, including graffiti removal, rust removal, addition of protective coatings, replacement of rubber gaskets or seals at access gates, and other periodic repairs to prevent or correct erosion near the floodwall.

- Maintenance yard work, including minor grading, maintenance of stormwater pollution prevention measures, stockpiling materials such as boulders, and similar general housekeeping activities.

- Maintenance of passive flood barriers installed on Lower Penitencia Creek and those that are anticipated to be installed along Coyote Creek above OHWM. These barriers may be raised and lowered for testing and ongoing maintenance purposes. Depending on the model of flood barrier, this process may be accomplished through operating built-in hydraulic systems or using mechanical equipment such as a crane or forklift. Periodic preventive maintenance of the flood barriers may include inspection, lubrication, changing hydraulic fluids and filters, and removing dirt and debris by hand or using a power washer or vacuum. Minor maintenance may also include repair and/or in-kind replacement of parts, including hoses, seals, and pumps. At times, a float test may be conducted to test the functioning of the flood barrier. Float tests involve filling the flood barrier pan with water or assembling a containment structure around the flood barrier and filling that structure with water. Water used in float tests will be disposed of in a manner that does not result in a significant impact on water quality of the creeks.

- Stream gauge maintenance, including cleaning stilling wells, painting gauge houses, replacing/adding antennae or solar panels to existing structures, replacing instrumentation, repairing cableways, cleaning weirs of algae and debris, and unburying staff markers and orifice/communication pipes.

- Minor erosion repair above OHWM, including the repair of small rills or gullies (less than 5 feet wide) that may develop in channel banks or upland areas due to localized runoff conditions. These minor erosion repairs differ from larger bank stabilization activities described in Chapter 6, *Bank Stabilization,* as they are typically caused by small local runoff occurring outside of the channel that is drained toward the channel (versus larger erosion repairs caused by flows in the channel itself). Typically, these minor erosion repairs involve recompacting earth in a narrow 1- to 5-foot-wide section of the upper streambank, maintenance road, or other upland location above the OHWM.

8.2.1 Requirements

A minor maintenance activity is work that results in the removal of less than 0.08 acre (3,485 square feet) of wetland or riparian vegetation. Project reporting is required for any individual project affecting 0.01 acre (436 square feet) or more of wetland or riparian vegetation or any activity where dewatering is performed. Minor maintenance activities resulting in less than 0.01 acre (436 square feet) of impacts are not required to be tracked or reported. All other minor activities are limited to an annual total of 0.5 acre of impacts to wetland and riparian vegetation and a 10-year (2027-2036) total of 4 acres of

impacts to wetland and riparian vegetation. Impacts to wetland or riparian vegetation necessary for access or staging for these minor maintenance activities are included in this total.

8.3 IMPACT AVOIDANCE AND ACTIVITY-SPECIFIC BMPS

Pre-planning general (GEN-) BMPs are implemented as applicable to the specific site conditions and resources. Minor maintenance activities occurring in the wetted channel of streams supporting sensitive fish species, if they are conducted outside of the in-stream work windows, must adhere to the relevant biological survey and monitoring requirements described in BMP GEN-1. Fully trained and qualified field crews perform these procedures. The full suite of BMPs is provided in Attachment A.

8.4 PROJECT AND PROGRAM LIMITS

Per-Project Limit:	0.08 acre (3,485 square feet) of wetland/riparian vegetation impacts
Project reporting required for minor maintenance projects resulting in 0.01 acre (436 square feet) or more of wetland/riparian vegetation impacts and for any activity where dewatering is performed	
Annual Limit:	0.5 acre of wetland/riparian vegetation impacts
Program Limit:	5-year Program limit is 2 acres of wetland/riparian vegetation impacts; 10-year Program limit is 4 acres of wetland/riparian vegetation impacts
Other:	Minor maintenance activities are limited to activities that result in temporary impacts (i.e., short-term in nature) and do not include activities that would result in permanent impacts (i.e., long-term effects) (e.g., construction of new structures, removal of trees greater than 6 inches diameter at breast height, or new hardscape). Minor maintenance activities are limited based on the wetland/riparian vegetation impacts associated with each project. To ensure that minor maintenance projects are unconnected, single, and complete actions, and not part of a larger action that will exceed the SMP's per-project size and placement limits, each minor maintenance project must demonstrate independent utility. An SMP project will be considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend on other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate, single, and complete

projects with independent utility of the same activity type.

Exceptions: None.

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CHAPTER 9. DOWNED TREE MANAGEMENT

This chapter describes the management of downed trees that are dead and/or dying. Management of live trees is described in Chapter 4. Fallen and downed trees, logs, or other debris in Valley Water channels increase hydraulic roughness, either directly or by capturing and trapping additional debris and vegetation, with the result of reducing conveyance capacity. Downed trees may require management through removal or repositioning to maintain a channel's designated flood capacity. Downed trees are evaluated for their potential to cause or increase flooding as well as erosion, bank failure, or negatively impact infrastructure. Downed trees outside of the channel may also result in other undesirable conditions such as blocked access roads and difficulty inspecting levees. Valley Water recognizes that downed trees also provide valuable natural resource benefits and habitat functions.

The SMP considers LWD as downed trees with a diameter of at least 12 inches and a length of at least 6 feet that have fallen below the OHWM in a salmonid creek. This minimum length and width of LWD are in alignment with the definition of LWD in Chapter 3 of the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al., 4th edition). Downed tree management actions described in this chapter pertain only to channels that support anadromous salmonids (see Figures 9-1 and 9-2 and Tables 9-1 and 9-2). Natural processes such as bank erosion, landslides, windthrow, and tree mortality may result in trees falling into stream channels throughout the year. While the habitat value of all downed trees is considered, downed trees that do not meet the criteria to be considered LWD do not have the same reporting and mitigation requirements as those that qualify as LWD. Requirements specific to downed trees classified as LWD are described under Section 9.3.2 and requirements that apply to downed trees in anadromous salmonid streams which are not classified as LWD are described under Section 9.3.3.

TABLE 9-1
Anadromous Salmonid Creeks in the Program Area – Central California Coast Steelhead Distribution

Creek/River	Upper Limit of Steelhead Distribution
Alamitos Creek	Almaden Dam
Arroyo Aguague*	Falls upstream from confluence with Upper Penitencia Creek
Calero Creek	Calero Dam
Coyote Creek	Leroy Anderson Dam
Guadalupe River/Creek	Guadalupe Dam
Los Gatos Creek	Camden Avenue Drop Structure
Los Trancos Creek*	Approximately 0.4 mile north of headwaters
San Francisquito Creek	Searsville Dam
Stevens Creek	Stevens Creek Dam
Upper Penitencia Creek	Cherry Flat Dam

* Although work is not expected on these creeks, they are within the Program area and are therefore included here.

TABLE 9-2
Anadromous Salmonid Creeks in the Program Area – South-Central California Coast Steelhead Distribution

Creek/River	Upper Limit of Steelhead Distribution
Bodfish Creek	Bodfish Creek Falls
Cedar Creek*	Approximately 3 miles north of Cedar Creek Boulder Falls #2
Little Arthur Creek*	Approximately 5 miles upstream of the confluence of Uvas Creek
Llagas Creek	Chesbro Dam
Pacheco Creek*	North Fork Dam
Pajaro River	Steelhead occur in all portions of the creek within Santa Clara County
Pescadero Creek*	Headwaters
Tar Creek	Southern end of Castro Valley approximately 1.8 river miles from headwaters
Uvas/Carnadero Creek	Uvas Dam
South Fork Pacheco Creek*	South Fork Pacheco Creek Boulder Falls

* Although work is not expected on these creeks, they are within the Program area and are therefore included here.

9.1 PURPOSE

Downed trees, including logs or limbs, may provide ecological value and function along anadromous salmonid creeks and channels in the Program area. In anadromous salmonid channels, Valley Water aims to retain downed trees or logs that function as LWD in-channel where possible to preserve the physical and biological processes associated with the natural recruitment of wood to waterways. Retention of LWD from fallen trees or residual logs will be considered in locations where it will not increase the flood risk by way of sedimentation, debris capture, or flow deflection.

Retaining downed trees or logs as LWD will be considered where the downed trees or logs appear stable and will not mobilize and damage nearby infrastructure (e.g., a bridge or culvert) or deflect flows in a manner that would cause erosion. If downed trees or logs pose a potential flood risk or are likely to damage infrastructure, Valley Water may reposition, modify, cut, or remove them to maintain channel flood capacity or infrastructure integrity. The primary goals associated with these actions are as follows:

- Retain downed trees or logs as LWD in the channel as possible for the benefit of native fish habitat;
- Minimize obstructions;
- Reduce the potential for erosion resulting from downed trees and the potential for deflecting flows toward banks where possible; and
- Protect and support the as-built functions of Valley Water flood control facilities and lands.

Removing debris jams/trash rafts may also involve modifications to LWD. Debris jams/trash rafts are collections of woody debris that have become entangled in the channel, typically including a mixture of non-organic trash. Clearing debris jams/trash rafts generally includes the removal of small woody debris, small lateral branches, and inorganic trash to alleviate water quality and channel capacity issues.

9.2 WORK ACTIVITIES

The process for assessment and prioritization of downed trees is triggered by annual or bi-annual field inspections by Valley Water staff, requests for services by members of the community, or requests from external entities such as cities or Santa Clara County.

As described in more depth in Section 9.3, decisions to retain, modify, cut, or remove downed trees or logs are based on review by maintenance crews, engineering staff, and biologists.

Heavy equipment may be used to modify or remove downed trees or logs. Work activities may occur year-round; however, downed tree management activities are scheduled during the SMP instream work season (June 15 to October 15) when feasible. If work activities occur outside of the scheduled work windows, BMPs from Attachment A will be implemented, such as pre-construction surveys (BMP GEN-6). If mechanized equipment must enter the channel, downed tree management actions are performed during the SMP instream work season. Equipment such as cranes or excavators

stationed on maintenance roads or similar staging areas above and outside of the wetted channel may be used to manipulate downed trees outside of the instream work season as long as the equipment does not enter the channel or otherwise adversely affect water quality. For example, the bucket of an excavator parked on the maintenance road may be used to reposition downed trees or a crane parked on a bridge may be used to pull downed trees out of the channel.

9.3 REQUIREMENTS

9.3.1 General Downed Tree Management Considerations

When a downed tree is observed in the channel, Valley Water biologists, maintenance staff, and engineers consider multiple questions to determine the appropriate management action. Such questions may include the following:

- What is the species and age of the downed tree?
- What degree of channel blockage is contributed by the downed tree or other factors?
- Where is the tree located in the channel and how is it positioned toward flows?
- How secure is the tree across (or in) the channel?
- Is the downed tree resulting in other negative conditions, such as limitation of access, a fire hazard, or difficulty inspecting levees?
- Can the tree be repositioned, adjusted, or modified to provide the necessary channel conveyance capacity?
- Does the tree provide significant channel shading or other instream habitat complexity benefits (if submerged in the channel), such as fish refugia or foraging areas?
- Does the downed tree provide other habitat benefits?

9.3.2 Large Woody Debris

In cases where the downed trees are functioning as LWD, the reasoning for the course of action chosen based on the types of questions described in 9.3.1 will be documented by Valley Water staff if the chosen management action involves anything other than simply retaining LWD in place. After answering these questions, downed tree management actions for LWD will be selected from the following options:

1. **Retain LWD in Place.** If the LWD appears to be providing habitat, geomorphic, or other channel stability benefits and is not increasing the flood or erosion threat, Valley Water will retain the LWD in its existing location. Retaining LWD on-site does not require prior agency notification and does not require monitoring by a qualified biologist.

2. **LWD Modification and/or Repositioning.** If the LWD cannot be left in its original configuration below the bankfull elevation due to flood risk, debris trapping, or erosion potential, the downed tree may be modified and left in place or repositioned onsite. Modifications are limited to removal of trash associated with the LWD and limbing of branches.

   Repositioning of LWD may occur when it is necessary to reorient or change the position of the tree or log to avoid excessive bank scour, avoid aggradations, or avoid channel incision. Lateral limbs less than 12 inches in diameter may be removed. Lateral limbs or portions of the tree trunk greater than 12 inches in diameter or larger than 6 feet in length may not be removed (such activities would be considered in the "Cutting or Removal of LWD" category, described below).

   Repositioning of LWD may be placed upstream or downstream of the original downed tree location. This category of work does not require prior agency notification. Where appropriate, the retained downed tree may be anchored in place.

3. **Cutting or Removal of LWD.** Valley Water may also cut or remove LWD when retaining, modifying, or repositioning the tree is not feasible due to limits in channel capacity, potential flood threat, potential flow deflection and associated bank erosion risks, public safety risks, and/or potential threat to Valley Water facilities or lands. Cutting lateral limbs and tree trunks greater than 12 inches in diameter is also considered under this work category. Complete removal of LWD typically occurs in highly modified streams with low or no tolerance for instream vegetation or structures such as LWD.

   If LWD is cut or removed, this category of work will be reported to the appropriate regulatory agencies within 1 week of completion and described in the ASR. Trees that are removed may be chipped, disposed of in the local landfill, or salvaged for reuse in Valley Water projects. Cutting and removal of LWD will be mitigated as described in Chapter 10, Section 10.6.6. If a large woody debris feature is removed, then mitigation will be provided to replace the lost functions and values associated with the large woody debris feature.

   For activities occurring in the creek reaches identified in Table 9-3, mitigation will also be provided for impacts to the portion of LWD above the OHWM/bankfull hinge point (see Figure 9-2). Cutting and removal of trees that do not meet the criteria to be considered LWD does not require mitigation. Valley Water evaluates the flow conveyance requirements in Table 9-3 stream reaches subject to downed tree management to assess whether the downed tree can be retained in place, pending available flow conveyance and lack of other risk factors.

   The removal of LWD to facilitate fish passage or maintain the function of existing fish ladders does not require mitigation. Such actions will be reported as LWD removal for fish passage to the appropriate regulatory agencies within 1 week of completion and described in the ASR in the fish ladder monitoring report.

TABLE 9-3
Salmonid Priority Reaches for Downed Tree Management in the Program Area

Creek/River	Salmonid Priority Reaches	Reach Creek Stationing
Alamitos Creek	Almaden Lake to Almaden Dam	2000-40500
Arroyo Aguague*	Entire creek	0-51937
Calero Creek	Confluence with Alamitos Creek to Calero Dam	0-22000
Coyote Creek	Hwy 101 near Morgan Hill to Leroy Anderson Dam	209000-222500
Guadalupe Creek	Almaden Expressway to Guadalupe Dam	108000-139000
Los Trancos Creek*	Entire creek	0-38975
San Francisquito Creek	Sand Hill Rd to Searsville Dam	38400-67800
Stevens Creek	Stevens Creek Blvd to Stevens Creek Dam	51500-67500
Upper Penitencia Creek	Noble Ave to Cherry Flat Reservoir	20000-51000
Bodfish Creek	Entire creek	0-43112
Cedar Creek*	Entire creek	0-32778
Little Arthur Creek	Entire creek	0-35148
Llagas Creek	Lake Silveira to Chesbro Reservoir Dam	73133-101000
Pacheco Creek*	Entire creek	0-93412
Pajaro River	Entire river reach in Program area	100000-168595
Pescadero Creek*	Entire creek	0-49988
Tar Creek	Entire creek	0-45992
Uvas Carnadero Creek	Miller Ave to Uvas Dam	43865-91500
South Fork Pacheco Creek*	Entire creek	0-48009

* Although work is not expected on these creeks, they are within the Program area and are therefore included here.

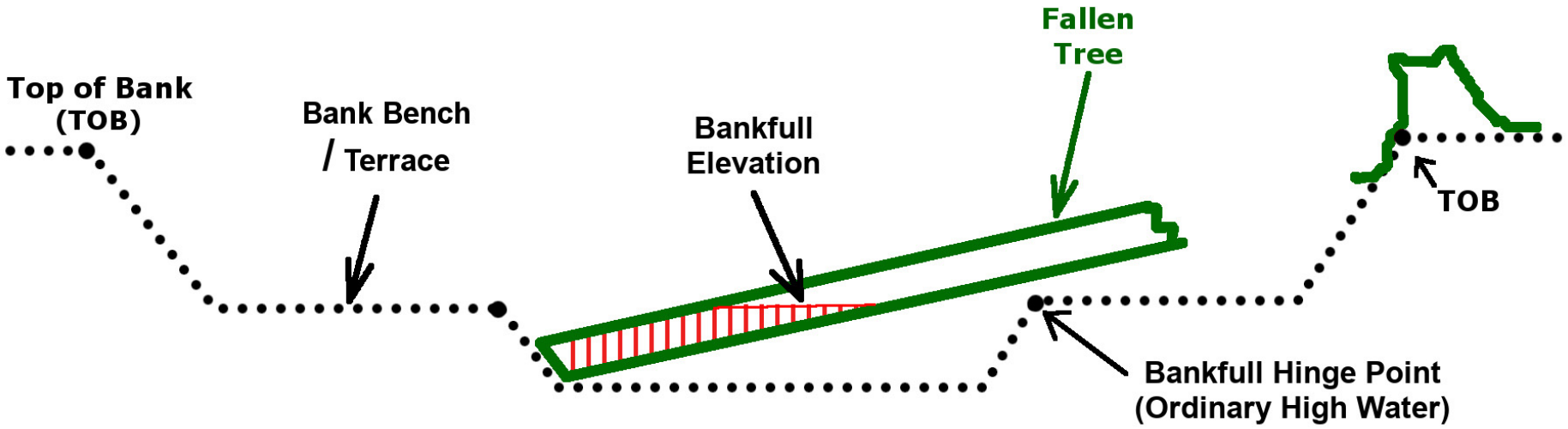
Notes: Ave = Avenue; Blvd = Boulevard; Hwy 101 = U.S. Highway 101; Rd = Road

Figure 9-1: LWD Mitigation Accounting Criteria

Mitigation is required for all fallen trees within anadromous salmonid channels with the following characteristics:

Minimum 30cm (12 inches) diameter and 183 cm (6 feet) in length occurring below the bankfull elevation/ordinary high water.

Only the portion below the bankfull elevation (red hatched area) will be measured for mitigation accounting purposes.

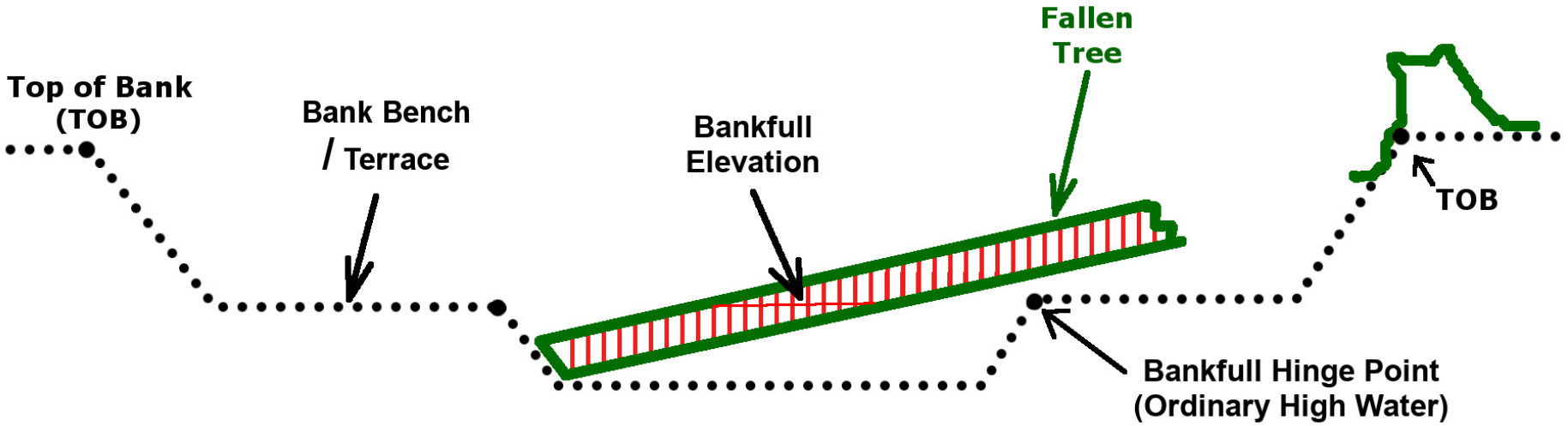


These guidelines pertain to the in-channel area which is defined as the stream channel within bankfull discharge demarcations. Bankfull is the river elevation (stage) at which time the most effective geomorphic work occurs. This is also referred to as the dominant discharge and is the stage that generally corresponds to a flow event with a 1-2 year recurrence interval. This coincides with bankfull hinge point in this figure. A typical small storm occurring on a regular basis will bring water up to the bankfull elevation as shown on the diagram above.

Figure 9-2: LWD Mitigation Accounting Criteria in High-Quality Reaches

Mitigation is required for all fallen trees within anadromous salmonid channels with the following characteristics:

Minimum 30cm (12 inches) diameter and 183 cm (6 feet) in length occurring below bankfull elevation/ordinary high water. The portion above and below the bankfull elevation/ordinary high water (red hatched area) will be measured for mitigation accounting purposes if the large woody debris is located in a high-quality reach identified in Table 9.2.



These guidelines pertain to the in-channel area which is defined as the stream channel within bankfull discharge demarcations. Bankfull is the river elevation (stage) at which time the most effective geomorphic work occurs. This is also referred to as the dominant discharge and is the stage that generally corresponds to a flow event with a 1-2 year recurrence interval. This coincides with bankfull hinge point in this figure. A typical small storm occurring on a regular basis will bring water up to the bankfull elevation as shown on the diagram above.

Modification or Removal of Downed Trees at Debris Jams/Trash Rafts

A trash raft is an accumulation of floating trash found in the creek channel and impeded by a downed tree, debris, or a narrowly confined channel. Removal of trash rafts improves the water quality of local waterways by removing hazardous items such as spray paint cans, butane canisters, plastics, and Styrofoam™ that emit chemicals into the water and pose a threat to animals that may confuse debris with food. Trash rafts tend to occur more frequently in the highly urbanized lower watershed areas.

A debris jam is an accumulation of large wood and other materials that can span an entire stream and, in urban settings, may create trash rafts consisting of high volumes of trash embedded with woody debris. The removal of debris jams/trash rafts may also require modification and/or removal of downed trees considered as LWD. Due to the overall water quality and environmental benefits of trash removal, mitigation may not be required for the removal of LWD associated with a trash raft/debris jam removal if prior notification with photographs is submitted to the appropriate regulatory agencies and agency pre-approval is obtained.

9.3.3 Other Downed Trees

Downed trees that do not meet the definition of LWD may still provide some ecological functions and values or have potential to contribute to ecological function and value in the future, particularly in relation to salmonid habitat function. In recognition of this, the following will apply to downed trees located below the top of the bank on streams that have anadromous salmonid populations that do not meet the definition of large woody debris.

When considering management of any downed trees, Valley Water staff will go through the General Downed Tree Management Considerations that are described in section 9.3.1. If after this process, Valley Water deems it necessary to remove any downed tree that is greater than 1 cubic yard in volume, documentation and reporting of that removal will be required. This documentation will include a photograph of the downed tree(s) that are being removed, the location (creek and stationing) of the downed tree(s), and a brief explanation of why the downed tree had to be removed. These will be reported to the resource agencies as part of the ASR.

The following situations will not require the reporting process described above:

- **Removal of Downed Trees as Part of Trash Removal** – Removal of trash is an activity that results in substantial ecological benefit. In some cases, downed trees are closely mixed in with trash and in order to effectively remove the trash, the downed trees must also be removed. In these situations, it is generally unsafe for maintenance staff to separate the woody material from the trash. In order to expedite and simplify this highly ecologically beneficial work, work in which trash is the majority of the material being removed will not require reporting.

- **Relocation and Modification of Downed Trees** – In many cases, issues surrounding downed trees may be resolved through relocation and/or modification of the downed trees. In these cases, the ecological function of the tree remains in the system. Examples of this could include relocation of a downed tree that is blocking a path, cutting of a downed tree that has fallen across a stream and created a blockage hazard, or relocation of downed trees that are making visual inspection of levees difficult.

9.4 IMPACT AVOIDANCE AND ACTIVITY-SPECIFIC BMPS

To reduce the potential for impacts associated with modification, repositioning, or cutting and removal of LWD below OHWM in salmonid creeks, Valley Water implements BMPs as appropriate. Fully trained and qualified field crews perform these procedures. Pre-planning general (GEN-) BMPs are implemented as applicable to the specific site conditions and resources. The full suite of BMPs is provided in Attachment A.

Valley Water provides an annual salmonid educational awareness training to all maintenance staff involved in downed tree management. Training emphasizes methods to cross a stream and work in-water that avoid or minimize impacts to water quality and salmonid habitat. These methods are presented in a salmonid BMP pamphlet distributed to all field crews at the time of the annual training. This pamphlet includes a list of steelhead creeks in the county, a diagram of the best areas to cross creek channels, and methods to avoid or minimize impacts to salmonid habitat.

Valley Water often receives requests for downed tree management from members of the public who do not fully understand the benefits of retaining LWD for aquatic habitat purposes. Valley Water's biologist will respond to these requests by educating the public about reasons for retaining LWD, such as for aquatic habitat and regulatory permit compliance, when downed trees do not pose a significant flood risk.

9.5 PROJECT AND PROGRAM LIMITS

Downed tree management activities are permitted year-round except in locations where mechanized equipment is required to work within the live stream channel or water quality may otherwise be affected. In these circumstances, downed tree management activities must be performed during the SMP work season of June 15 to October 15; work extensions may be applicable per BMP GEN-1 In-Channel Work Windows.

Per-Project Limit:	There is no specific limit to the number of downed tree repositionings, modifications, cuttings, and removals.
10-Year Program Limit:	Up to 200 cubic yards of LWD cutting and removal work activities may occur during the 10-year Program period (2027-2036). This 10-year limit does not apply to downed tree removal activities required for fish passage or those associated with removal of debris jams/trash rafts as these collective actions are considered to result in a water quality benefit.

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CHAPTER 10. MITIGATION PROGRAM

10.1 PURPOSE

Mitigation is one element of Valley Water's comprehensive approach to impact avoidance, minimization, and compensation. As described in Chapter 3, project planning, resource evaluations, and MGs are used to prioritize work activities and avoid unnecessary maintenance. Valley Water implements numerous BMPs, as well as conditions incorporated under the Santa Clara VHP adopted in 2013, to avoid and/or minimize impacts. However, even with implementation of BMPs, SMP activities may result in unavoidable impacts to waters of the U.S./state, bed/bank/channel and associated riparian habitat, and habitat supporting special-status species. This chapter describes Valley Water's compensatory mitigation approach for addressing unavoidable impacts based on regulatory guidance described in Section 2.11, Applicable Regulatory Guidance for SMP-3 Mitigation Program.

10.2 SMP-1 MITIGATION APPROACH (2002-2012)

SMP-1 refers to the original SMP period, 2002-2012. Under SMP-1, permanently mitigated areas (PMAs) were established for select maintenance activities, including sediment removal projects, removal of woody and herbaceous vegetation less than 6 inches dbh, and aquatic herbicide application activities that were projected to have impacts on wetlands and other waters of the U.S./state. PMAs were also established for pruning of overhanging vegetation growth along maintenance roads and fence lines. SMP-1 mitigation requirements were established prior to the work occurring based on Valley Water's projected maintenance activities for the period 2002-2012. PMAs were established in perpetuity through a combination of land acquisition, habitat protection, and wetland restoration/creation activities.

Figures 3-6, 3-7, and 3-8 include maps showing SMP reaches that are included in the PMA for sediment removal, instream vegetation, and herbicide application maintenance activities. The specific reach locations for these PMA reaches shown in the Chapter 3 figures are identified in Attachment B, Table 3.

PMAs established to mitigate impacts from sediment removal maintenance activities also mitigate for impacts to vegetation that occur during sediment removal (including the removal of trees less than 6 inches dbh) and impacts to wetlands within the activity area associated with the sediment removal work. Note that beyond the coverage of impacts to wetlands and riparian vegetation, PMA mitigation does not cover impacts to certain habitat features that are used by sensitive species. For example, PMA mitigation does not cover impacts to salmonid habitat features such as LWD and coarse sediment. Impacts to these features will be reported and, if appropriate, mitigation will be provided for those impacts.

10.3 SMP-2 MITIGATION APPROACH (2013~~2014~~-2023)

SMP-2 refers to the second decade of the SMP, 2013~~4~~-2023 with permit extensions through 2026. Under SMP-2, Valley Water adjusted its approach to include more on-site and off-site mitigation activities based on annual work needs, in addition to the PMAs. Under the SMP-2 approach, Valley Water has provided and continues to provide mitigation on an annual basis. Each year, the annual mitigation needs are estimated as closely as possible and are described in the NPW. The final required mitigation amount is then verified based on the actual amount of impacts that occurred and is described in the ASR. Under the SMP-2 approach, compensatory mitigation is provided using the following three methods:

1. *On-site and off-site ecologic services–based mitigation* – invasive plant management, native plant revegetation, and removal of trash and pollutants resulting from encampment activities, concrete removal, and rehabilitation of encampment-related excavated banks.
2. *Land acquisition–based mitigation* – use of remaining credits from completed SMP-1 mitigation projects (see Attachment B) and creation of new land acquisition–based projects.
3. *Species-specific mitigation* – gravel augmentation and building instream complexity features.

During SMP-2, Valley Water also established 5-year mitigation areas (FMAs). FMAs provide mitigation for certain maintenance activities (e.g., removal of vegetation less than 6 inches dbh, pruning, aquatic herbicide use, and post-emergent herbicide use, but not sediment removal) within a particular location for a period of 5 years following the initial impact. Further work conducted in these areas during the 5-year period did not incur new mitigation debt. FMA mitigation does not provide mitigation for SMP-2 impacts on sensitive species or their habitats (for SMP-2, Valley Water has relied largely on avoidance of sensitive species and their habitats to avoid the need for mitigation).

Following 2019, and based on feedback received from regulatory agencies, Valley Water has shifted the SMP-2 mitigation strategy toward prioritizing larger multi-benefit mitigation projects. For example, along Calera Creek, Valley Water removed sediment over a large area to make sure there was capacity in the reach to allow long-term vegetation establishment; removed some large invasive trees; and installed a large revegetation site. Valley Water has also implemented a mitigation project on Saratoga Creek that included rehabilitating a bank that had been altered through compaction, construction of dirt bike ramps, trash removal, and removal of concrete fragments from the channel.

During SMP-2, Valley Water primarily mitigated for impacts to salmonid habitat features through the construction of projects that installed LWD, gravel, and/or instream complexity features in the same watershed. Valley Water also constructed one fish

passage improvement project on Stevens Creek at Evelyn Avenue. However, this project was not successful and therefore the mitigation was not applied to any SMP-2 impacts. This project is described further below.

10.4 SMP-3 MITIGATION APPROACH (2027-2036) OVERVIEW

For SMP-3, Valley Water plans to return the mitigation approach focus to establishing additional PMA reaches for impacts to wetlands and waters of the U.S./state. Because the existing PMAs (developed under SMP-1) provide permanent mitigation, no additional mitigation is required along those reaches where PMAs for maintenance activities have already been established.

To determine future mitigation needs, Valley Water will quantify Program impacts on biological resources, such as the acreage of impacts to wetlands and riparian habitats, sensitive communities, and special-status species' habitats, on an annual basis as work is performed during 2027–2036. Valley Water will tally the impacts of Program activities for a specific year at the end of each year. These impact calculations will then be used as the basis for determining mitigation to be provided at either that year's end or the following year. This annual analysis will clearly distinguish where activities occurred (e.g., in a PMA versus in new areas for which mitigation is required).

Valley Water may seek to establish new PMAs for (1) reaches that don't currently have any PMA status; or (2) for reaches that have an activity-specific PMA (i.e., for sediment removal), but don't have PMA status for another activity (i.e., instream vegetation maintenance). The goal is that, over time, Valley Water will establish new PMAs along channel reaches that are not covered currently. Similar to SMP-1, new PMAs will be established through mitigation actions such as land acquisition, habitat protection, and wetland restoration/creation.

Some SMP-1 mitigation projects have not yet been applied to impacts. Therefore, in addition to new permanent mitigation actions, remaining mitigation from mitigation projects established during SMP-1 will mitigate new permanent impacts (i.e., Island Ponds, Pajaro Freshwater Wetland, and Landings project).

The proposed SMP-3 mitigation approach may also rely on the VHP amendment, which is currently being amended[1] and expected to be considered for approval in 2026, and the associated VHP In Lieu Fee (ILF) Program. Mitigation under the VHP ILF Program for impacts to waters of the U.S./state may require SMP maintenance activities to be covered activities under the VHP[2] so that the VHP's ILF could compensate for SMP-3

[1] The VHP amendment includes the addition of new covered species, updates to the conservation strategy, adding the Program Renewal as a covered activity, expanding the VHP area boundary, and more.

[2] Section 2.1.1 of the Santa Clara Valley Habitat Plan ILF Program enabling instrument states: "Use of the ILF Program by non-covered activities will be considered on a case-by-case basis and allowed if agreed to by all Parties."

impacts to regulated habitats in addition to VHP-covered species. If SMP-3 maintenance activities are categorized as covered activities under the VHP amendment, Valley Water would comply with VHP conditions, pay impact fees in accordance with the types and acreage of habitat, and implement VHP-specified conservation measures.

Because establishing permanent mitigation (i.e., new PMAs) for additional SMP-3 channel areas may take time and the VHP amendment may not be finalized until 2025-2027, Valley Water may continue to use the SMP-2 approach of providing mitigation on an annual basis while new PMAs (and potentially the payment of VHP fees and/or purchase of ILF credits as an additional mitigation option) are developed. Even after establishing new PMAs, Valley Water will need to incorporate some level of temporary or annual mitigation where this approach is more appropriate.

Section 10.5 describes Valley Water's detailed approach to mitigate SMP-3 impacts through establishing new PMAs and proposed mitigation options that would be implemented on an annual basis. Section 10.6 describes additional mitigation options that Valley Water will use to mitigate SMP-3 impacts during the initial period before the VHP is amended, when providing mitigation via new PMAs or the payment of VHP fees and/or purchase of ILF credits may not be viable options. The additional mitigation options described in Section 10.6 may also be implemented after the VHP amendment is completed as Valley Water establishes new PMAs, to allow flexibility.

Overview of SMP-3 Activities Requiring Mitigation

Valley Water will provide compensatory mitigation required under permits from regulatory agencies (e.g., USACE, San Francisco Bay and Central Coast RWQCBs, CDFW) and in accordance with CEQA mitigation requirements identified in the SMP-3 SEIR for maintenance activities that would result in temporary and/or permanent impacts on wetlands and waters of the U.S./state and habitat supporting federally listed and state-listed species. Example activities that may require compensatory mitigation include sediment removal, bank stabilization, herbicide application, removal of large woody debris, removal of vegetation less than 6 inches dbh below OHWM, and removal of trees greater than 6 inches dbh.

Debris basins and sediment deposition reaches (SDRs) are structures that are designed to capture sediment in locations where it can be removed with minimal environmental impact. Removal of sediment from debris basins or SDRs is therefore exempt from sediment removal mitigation requirements. Removal of below OHWM vegetation in the debris basins and sediment deposition reaches is also exempt from sediment removal mitigation requirements, whether this removal is done in association with the sediment removal item or as a standalone action. If any sediment or vegetation removal occurs in the main channel parallel to an SDR, that sediment removal in the main channel would be subject to all standard mitigation requirements.

Several vegetation management activities must occur to maintain and support ecological function of the riparian corridor. These include coppicing, corrective pruning, hazard tree

pruning, grazing, and mowing application and are not expected to incur mitigation. Additionally, work that falls into the Fire Resilience~~y~~ purpose category or hazard tree removal which is determined to provide a net ecological benefit by protecting ecological resources from damage by fire will also be exempt from mitigation requirements.

Vegetation activities described in Chapter 4 as Restoration Site Maintenance, Ecological Health – Invasive Plant Management, and Ecological Health – Other will also be exempt from compensatory mitigation requirements. More specifically, vegetation activities that occur to meet the goals and objectives of a land management plan or revegetation site shall be exempt from mitigation requirements. An example of this type of work would be a site which is being maintained as a freshwater emergent wetland where periodic removal of small willow saplings is needed to avoid conversion of the site from freshwater emergent wetland to willow riparian.

~~Lastly, work that is conducted to support ecological health and function as described in a reach characterization and may improve the site's function as habitat for sensitive species may also be exempt from mitigation requirements when approved by the regulatory agencies (see Section 10.6.7 and Section 10.5.3).~~

Impacts from SMP-3 activities that may require mitigation include the following:

- Removal of vegetation less than 6 inches dbh inside of riparian areas (note: lower mitigation ratios should be required for removal of native herbaceous and woody vegetation where re-sprouting occurs within 1 year and full functions/values return within 2 years).
- Removal of trees greater than 6 inches dbh (non-invasive and otherwise healthy trees).
- Impacts to wetlands (i.e., due to sediment removal, vegetation removal, and bank stabilization work).
- LWD removal from anadromous salmonid creeks.
- Loss of instream habitat complexity from anadromous salmonid creeks (e.g., loss of instream habitat supporting anadromous salmonids due to sediment removal activities and undercut banks during bank stabilization activities).
- Repair of eroded banks that would result in new, permanent hardscape (beyond the footprint of pre-project hardscape).

Additionally, mitigation will be necessary for activities resulting in the loss of habitat supporting certain sensitive species. The species for which habitat mitigation may be necessary will largely be the same as described in the SMP's Environmental Impact Report and SMP-2.5 Manual (SCVWD 2011, 2019), with the addition of foothill yellow-legged frog habitat and potentially monarch butterfly due to updated listing statuses of both species.

Table 10-1 summarizes the proposed mitigation ratios for SMP-3 by impact type; however, note that these mitigation ratios will not be applicable if Valley Water mitigates the impact through the VHP, as described in more detail in Section 10.6. Table 10-2 summarizes the proposed mitigation ratios by channel type. Table 10-3 summarizes proposed mitigation ratios for each bank repair type when on-site and off-site mitigation approaches are applied.

TABLE 10-1
Summary of Proposed SMP-3 Mitigation Ratios

Impact Type	Proposed Mitigation Ratio[1]	Notes	Mitigation Options[6]	SMP Permanently Mitigated Areas (PMA) Established?	VHP Covered Activity (VHP Impact Fee Required or ILF?)[2]
Removal of vegetation <6" dbh below OHWM	1:1	The 1:1 mitigation obligation for this activity is the area of canopy removed (sq ft). ~~A lower mitigation ratio should be applied where re-sprouting occurs within 1 year and full functions and values return within 2 years.~~ Impacts that are mitigated as removal of vegetation < 6" dbh do not require additional mitigation for temporary impacts to wetlands. For bank stabilization projects, mitigation is not required for cumulative temporary impacts that are less than the per-project maximum (3,485 sq ft) for minor maintenance activities. Mitigation is not required for removal of vegetation <6" dbh done as part of the construction of sediment removal projects.	Encampment cleanup, grant program for local watershed groups, trash and debris removal, revegetation, ~~reach characterization sheets,~~ post-wildfire recovery	Yes[3]	Yes
Removal of high-quality vegetation due to aquatic herbicide application	1:1	The 1:1 mitigation obligation for this activity is the area of vegetation removed (sq ft).	Trash and debris removal or seeding the vegetation removal area	Yes[3]	No

Impact Type	Proposed Mitigation Ratio[1]	Notes	Mitigation Options[6]	SMP Permanently Mitigated Areas (PMA) Established?	VHP Covered Activity (VHP Impact Fee Required or ILF?)[2]
Removal of non-invasive trees > 6" dbh[4, 5]	~~1:1~~ 2:1 or 3:1 Tree Replacement Count*	All native trees >6" dbh that are removed will be mitigated at a 3:1 ratio. All non-native trees >6" dbh that are not classified as invasive species will be mitigated at a 2:1 ratio. If tree removal results in more than five adjacent hazard trees, each 12" dbh or larger, or a stand of trees with a canopy area equal to or larger than 2,000 square feet, the affected area will be revegetated with native woody vegetation components. ~~The 1:1 tree replacement count applies to the removal of non-invasive trees, including hazard trees that are otherwise healthy.~~ When ~~T~~the removal of invasive trees and certain hazard trees (e.g., diseased ones) ~~that~~ provides ~~an~~ a net ecological benefit by protecting ecological resources, then no mitigation is required. ~~does not require mitigation.~~	Encampment clean-up, grant program for local watershed groups, revegetation, ~~reach characterization sheets,~~ post-wildfire recovery	No	Yes
Temporary Impacts to Wetlands	0.1:1 or 0:1	~~If the wetland vegetation reestablishes within 2 years following the impact.~~ In cases where the maintenance activity does not remove vegetation down to root level (typically 16 to 18 inches below the surface) and no cut stump herbicide is applied and the vegetation has	~~N/A~~ Revegetation, encampment cleanup, trash removal, post-wildfire recovery, and grant	N/A	Yes

Impact Type	Proposed Mitigation Ratio[1]	Notes	Mitigation Options[6]	SMP Permanently Mitigated Areas (PMA) Established?	VHP Covered Activity (VHP Impact Fee Required or ILF?)[2]
		been left in place, then no mitigation is required.	programs for local watershed groups		
Permanent Impacts to Wetlands	1.5:1 or as determined in mitigation site plan (for land acquisition)	The mitigation obligation for this activity is the area (sq ft) of the impact. Wetland impacts can result from sediment removal, bank stabilization, and vegetation management work.	Creation, restoration, enhancement, or rehabilitation of wetlands, land acquisition (preservation) Island Ponds or Pajaro Freshwater Wetland remaining mitigation grant program for local watershed groups	Yes[3]	Yes
Permanent bank stabilization	See Table 10-3	The mitigation ratio in Table 10-3 applies to the hardened area (sq ft) only. This refers to impacts in the “Permanent” columns of Table 10-3.	Revegetation, hardscape or concrete removal, land acquisition, post-wildfire recovery, encampment cleanup and bank rehabilitation, grant program for local watershed groups	No	Yes

Impact Type	Proposed Mitigation Ratio[1]	Notes	Mitigation Options[6]	SMP Permanently Mitigated Areas (PMA) Established?	VHP Covered Activity (VHP Impact Fee Required or ILF?)[2]
Temporary bank stabilization	See Table 10-3	This refers to the area (sq ft) of impacts in the "Temporary" columns of Table 10-3.	Revegetation, encampment cleanup, ~~reach characterization sheets,~~ post-wildfire recovery, grant program for local watershed groups	No	Yes
Sediment removal[8]	~~1:1~~ 1.2:1	Proposed mitigation ratio applies to non-PMA, ~~or e~~arthen channel bottom, or when vegetation is present within concrete channels.	Revegetation, encampment cleanup, trash and debris removal, ~~reach characterization sheets,~~ post-wildfire recovery, grant program for local watershed groups	Yes[3]	Yes
Large woody debris removal in salmonid creeks[9]	1:1	In anadromous salmonid creeks only (cubic yards) (mitigation obligation: volume of impact)	Projects to restore salmonid habitat values and functions	No	No[7]
Loss of instream habitat complexity features/coarse sediment removal	1:1	In anadromous salmonid creeks only (sq ft/ cubic yards)	Projects to restore salmonid habitat values and functions	No	No[7]

Impact Type	Proposed Mitigation Ratio[1]	Notes	Mitigation Options[6]	SMP Permanently Mitigated Areas (PMA) Established?	VHP Covered Activity (VHP Impact Fee Required or ILF?)[2]
Tidal wetland	1.2:1	Tidal wetland impacts can occur from sediment removal, bank stabilization, and vegetation management work.	Remaining mitigation from the 9 acres of tidal wetland restoration completed at the Island Ponds will be used.	Yes[3]	N/A

Notes: dbh = diameter at breast height; PMA = permanent mitigation area; sq ft = square feet

~~*Unless covered by the VHP Plan.~~

1 Mitigation ratios are presented as mitigation obligation: area of impact except where noted as volume of impact. A ratio of 0:1 indicates the activity is self-mitigating. Mitigation ratios may be modified on a project-by-project basis in negotiation with regulatory agencies during the NPW process.

2 Assuming the SMP is eventually covered under the VHP amendment, SMP-3 maintenance activities that occur within the VHP area would be subject to habitat and land cover impact fees and/or purchase of ILF credits for the indicated activities; in this case, the proposed mitigation ratios will no longer be relevant. If maintenance activities occur outside of VHP-covered areas, or if a species is not covered under the VHP, mitigation would apply as described in Section 10.5.3.

3 PMAs have been established for sediment removal, removal of vegetation less than 6 inches dbh below OHWM, and aquatic herbicide application.

4 This includes the removal of both native and non-native trees that are non-invasive.

~~5 If the tree is determined to provide unique functions and values, removal of the tree will be mitigated at a 1:1 ratio.~~

6 Native plant revegetation, removal of trash and pollutants from encampment activities, and rehabilitation of encampment-related excavated banks are not acceptable mitigation for permanent impacts to waters of the U.S. although they may provide acceptable mitigation for other regulatory agencies.

7 Similar to the existing VHP, the VHP amendment is not anticipated to cover salmonid impacts. Any impacts on VHP-covered species will be covered with payment of the impact fee; in this case, the proposed mitigation ratios will no longer be relevant.

8 Salmonid habitat impacts are assessed and determined separately from sediment removal impacts (see Section 10.5.3).

9 Ratio included for LWD refers to volume replacement.

TABLE 10-2
Summary of Proposed SMP-3 Mitigation Ratios by Channel Type

Type of Mitigation Activity	Mitigation Ratio in Modified Channels	Mitigation Ratio in Unmodified Channels
Revegetation (sq ft)[1]	1.1:1	1.5:1
Salmonid habitat restoration	Ratios will be described in mitigation site plans	Ratios will be described in mitigation site plans
Concrete removal (below OHWM, includes structures and rubble)[2]	2:1	3:1
Encampment cleanup (cy) or rehabilitation of excavated banks (sq ft)[1]	54 sq ft: 1 cy (encampment cleanup) 1:1 (rehabilitation of excavated banks)	54 sq ft: 1 cy (encampment cleanup) 1:1 (rehabilitation of excavated banks)
Post-wildfire recovery[1]	Ratios will be described in individual wildfire recovery plans.	
Land acquisition	Ratios will be described in mitigation site plans.	
Island Ponds[3]	Approximately 9 acres of remaining credit for tidal wetland impacts	
Pajaro Basin Freshwater wetland[4]	5.3 acres of remaining credit, including 3.7 acres of credit for jurisdictional wetland impacts	

Notes: Mitigation credit ratios are presented as area of mitigation credit generated: area of mitigation project. Mitigation ratios may be modified on a project-by-project basis in negotiation with regulatory agencies during the NPW process. Salmonid habitat restoration, post-wildfire recovery, and land acquisition mitigation projects are projects which are too complex and variable to assign standardized ratios and therefore project-specific mitigation values will be developed.

cy = cubic yards; sq ft = square feet

[1] Not acceptable mitigation for impacts to waters of the U.S.

[2] Valley Water staff should evaluate each potential concrete removal project carefully to assess whether removing the concrete would in fact provide a benefit for aquatic species (e.g., steelhead) and other ecological benefits.

[3] Mitigation at Island Ponds will provide credit for tidal wetland impacts at a ratio of 1.2:1 unless the quality of the habitat affected is substantially different from that present in the Island Ponds, in which case mitigation credit may be provided at a correspondingly reduced or increased ratio (e.g., 0.8:1 or 1.5:1) with agency approval.

[4] Pajaro Basin Freshwater wetland can only be used for impacts within Central Coast RWQCB jurisdiction and will provide credit for wetland impacts at a 1:1 ratio.

TABLE 10-3
Proposed Bank Stabilization Mitigation Ratios According to Repair Method and Channel Type

Method Number	Method Name	Method Type (Soft, Hybrid, Hard)	Ratio of Mitigation Required for Impacts in Modified[1] Channels		Ratio of Mitigation Required for Impacts in Unmodified[2] Channels		Percentage of Use (2014-2022)
			Temporary	Permanent	Temporary	Permanent	
1	Earth Repair	Soft					28%
1A	Earth Repair with Buried Rock	Soft					5%
1B1	Earth Repair with Rock Base Vegetated	Hybrid		Range from 0 to 0.5:1off-site for rock base impacts		Range from 0 to 1:1off-site for rock base impacts	5%
1B2	Earth Repair with Rock Base Not Vegetated	Hard		0.5:1off-site for rock base impacts		1:1off-site for rock base impacts	15%
2	Live Construction	Soft					0%
2A	Live Construction with Boulder Base	1. Hybrid if rock area is vegetated		Range from 0 to 0.5:1 off-site for rock base impacts		Range from 0 to 1:1 off-site for rock base impacts	5%
		2. Hard if rock area is not vegetated		1:1 off-site for base impacts if boulder base is not vegetated		3:1 off-site for base impacts if boulder base is not vegetated	0%
2B	Live Construction with Log Base	Soft					0%

Method Number	Method Name	Method Type (Soft, Hybrid, Hard)	Ratio of Mitigation Required for Impacts in Modified[1] Channels		Ratio of Mitigation Required for Impacts in Unmodified[2] Channels		Percentage of Use (2014-2022)
			Temporary	Permanent	Temporary	Permanent	
3	Contour Wattling	Soft					1%
3A	Contour Wattling with Boulder Base	1. Hybrid if rock area is vegetated		Range from 0 to 0.5:1 off-site for rock base impacts		Range from 0 to 1:1 off-site for rock base impacts	0%
		2. Hard if rock area is not vegetated		1:1 off-site for base impacts if boulder base is not vegetated		3:1 off-site for base impacts if boulder base is not vegetated	1%
3B	Contour Wattling with Log Base	Soft					0%
4	Brush Mattress (Brush Layering)	Soft					0%
4A	Brush Mattress (Brush Layering) with Boulder Base	1. Hybrid if rock area is vegetated		Range from 0 to 0.5:1 off-site for rock base impacts		Range from 0 to 1:1 off-site for rock base impacts	0%
		2. Hard if rock area is not vegetated		1:1 off-site for base impacts if boulder base is not vegetated		3:1 off-site for base impacts if boulder base is not vegetated	
4B	Brush Mattress (Brush Layering) with Log Base	Soft					0%

Method Number	Method Name	Method Type (Soft, Hybrid, Hard)	Ratio of Mitigation Required for Impacts in Modified[1] Channels		Ratio of Mitigation Required for Impacts in Unmodified[2] Channels		Percentage of Use (2014-2022)
			Temporary	Permanent	Temporary	Permanent	
5	Surface Matting (Erosion Mats)	Soft			2:1		1%
5A	Surface Matting (Erosion Mats) with Boulder Base	Hard		0.5:1		3:1	4%
5B	Surface Matting (Erosion Mats) with Log Base	Soft			2:1		0%
6	Add Rock to Invert (Channel stabilization method; considered hard for notification purposes)	Hard		3:1		3:1	4%
6A	Rock Cross Vanes (Grade control structure; considered hard for notification purposes)	1. No additional mitigation required if the agencies provide written concurrence that rock placed along channel bed provides habitat complexity functions					4%
		2. Off-site mitigation		2:1		3:1	

Method Number	Method Name	Method Type (Soft, Hybrid, Hard)	Ratio of Mitigation Required for Impacts in Modified[1] Channels		Ratio of Mitigation Required for Impacts in Unmodified[2] Channels		Percentage of Use (2014-2022)
			Temporary	Permanent	Temporary	Permanent	
		required if rock placed along the channel bed does not provide habitat complexity function					
6B	Root Wads and Boulders	Hybrid					5%
6C	Live Log Crib Walls	Soft	0.5:1		2.5:1		3%
6D	Log Revetment	Hybrid	0.5:1		2.5:1		0%
6E	Bendway Weirs (considered hard for notification purposes)	1. No additional mitigation required if the agencies provide written concurrence that rock placed along channel bed provides habitat complexity functions					0%

Method Number	Method Name	Method Type (Soft, Hybrid, Hard)	Ratio of Mitigation Required for Impacts in Modified[1] Channels		Ratio of Mitigation Required for Impacts in Unmodified[2] Channels		Percentage of Use (2014-2022)
			Temporary	Permanent	Temporary	Permanent	
		2. Off-site mitigation required if rock placed along the channel bed does not provide habitat complexity function		2:1		3:1	
7	Cellular Confinement System	Hard		3:1		3:1	0%
8	Rock Blanket	Hard		3:1		3:1	0%
8A	Boulder Revetment	Hard		3:1		3:1	18%
8B	Boulder Revetment with Soil and Vegetation	Hybrid	0.5:1	Range from 0 to 0.5:1 depending on whether rock is buried	2.5:1	Range from 0 to 0.5:1 depending on whether rock is buried	0%
9	Articulated Concrete Blocks	Hard		3:1		3:1	0%
9A	Articulated Concrete Blocks with Planted Areas	Hard		3:1		3:1	0%
10	Concrete Crib Walls	Hard		3:1		3:1	0%

Method Number	Method Name	Method Type (Soft, Hybrid, Hard)	Ratio of Mitigation Required for Impacts in Modified[1] Channels		Ratio of Mitigation Required for Impacts in Unmodified[2] Channels		Percentage of Use (2014-2022)
			Temporary	Permanent	Temporary	Permanent	
11	Sacked Concrete	Hard		3:1		3:1	0%
12	Gunite Slope Protection	Hard		3:1		3:1	0%
13	Soldier Piles	Hard		3:1		3:1	0%

Notes: Mitigation ratios are presented as mitigation obligation: area of impact. For some types of bank repairs, a sliding scale of mitigation is included to account for projects that involve vegetation to improve the existing condition of the channel. Bank repairs that would only revegetate the top of bank would have a higher mitigation ratio than bank repairs that involve revegetation of the entire bank and incorporate an in-channel feature, such as LWD. The mitigation ratios provided above relate to the amount of vegetation incorporated into the repair and if the channel is modified or unmodified.

Repair methods do not require mitigation if no mitigation ratio is shown. As indicated in this chapter, however, mitigation ratios may be modified on a project-by-project basis through negotiation with regulatory agencies during the NPW process.

Mitigation ratio applies to the bank repair method area. Mitigation ratios will be applied to calculate mitigation requirements in square feet. These ratios are for non-land acquisition mitigation and do not apply to mitigation options involving payment of VHP impact fees. When synthetic geotextile matting is utilized as part of a bank stabilization method, the area of synthetic geotextile use is considered hardscape (3:1 ratio).

Vegetation installed as part of revegetation will match that in the area adjacent to the bank repair. Native species will be substituted in cases where areas adjacent are dominated by non-native species.

[1] The mitigation ratios for modified channels include: (1) 0.5:1 ratio relates to revegetation of only the top of bank; (2) 0.3:1 ratio relates to revegetation of the top and middle portion of the bank; (3) 0.1:1 ratio relates to revegetation of the top and mid bank and in the rock area; and (4) 0:0 ratio relates to revegetation of the entire bank and incorporation of an in-channel feature that would result in an improvement over the existing condition.

[2] The mitigation ratios for unmodified channels include: (1) 1:1 ratio relates to revegetation of only the top of bank; (2) 0.75:1 ratio relates to revegetation of the top and middle portion of the bank; (3) 0.5:1 ratio relates to revegetation of the top and mid bank and in the rock area; and (4) 0:0 ratio relate to revegetation of the entire bank and incorporation of an in-channel feature that would result in an improvement over the existing condition.

10.5 SMP-3 MITIGATION APPROACH

Section 10.5.1 provides a summary of Valley Water's proposed mitigation approach for establishing new PMAs to address impacts to jurisdictional habitats through the following methods: (1) SMP-specific land conservation, (2) using remaining mitigation, and (3) payment of VHP impact fees and/or purchase of ILF credits.

Obtaining potential coverage under the VHP could be a component of the proposed mitigation package, provided that the VHP's in-lieu fee program would make enough credits available for Valley Water to purchase to be able to compensate for SMP-3 impacts to regulated habitats and VHP-covered species.

With the exception of using remaining mitigation, it may be several years before Valley Water is able to fully implement these mitigation options due to the large scale of some of the mitigation projects and the time involved for completing the plan design and the permitting process for the projects. Accordingly, similar to the approach under SMP-2, providing mitigation on an annual basis for SMP-3 maintenance activities will likely continue to be necessary while these longer-term approaches are developed.

Section 10.5.2 describes Valley Water's proposed mitigation approach for addressing impacts on an annual basis and for activities that are more infrequent where establishing PMAs would not be appropriate. Annual mitigation needs would be met through a combination of the following programs: (1) encampment cleanup and bank rehabilitation, (2) a grant program to fund projects by local watershed groups, (3) trash removal, (4) revegetation, (5) concrete removal, and (6) post-wildfire rehabilitation. Section 10.5.3 describes mitigation options for addressing impacts to special-status species.

Regulatory agencies have different mandates and preferences for allowable mitigation approaches. Valley Water will coordinate with all of the authorizing agencies to find acceptable mitigation.

Stream Reach Characterization Sheets

As an additional mitigation approach for addressing impacts to the riparian corridor, Valley Water may develop reach characterization sheets for areas where frequent maintenance activities are projected to occur during the 10-year SMP-3 period. These sheets would characterize the biological resources, water quality conditions, and overall ecological function of a particular stream reach; indicate ongoing and future maintenance needs; identify whether opportunities exist to avoid and minimize impacts on sensitive habitat areas; and evaluate whether potential restoration opportunities exist within the reach. The characterization sheets may also be used to identify and map large trees with high importance and ecological value and describe potential opportunities for enhancing these trees. A specific number of reach sheets would be developed and provided to regulatory agencies as part of Valley Water's overall SMP-3 mitigation approach.

Reach characterizations will be helpful in planning to maintain a site in a state of ecological equilibrium. Once a reach characterization has been developed, vegetation management work within the reach can be aligned with the longer-term reach vision. In this way, the maintenance work can be directed toward supporting the longer-term ecologic goal for the reach. If vegetation management within a reach can be directed toward achieving that reach's target ecological function and value, then the maintenance work may be exempt from compensatory mitigation requirements. To be exempt from mitigation requirements due to alignment with reach characterizations, proposed work activities must not involve removal of trees greater than 6 inches dbh, result in conversion of habitat from one type to another, or adversely affect the site's function as habitat for special-status species.

10.5.1 Mitigation Approaches for Establishing New PMAs

Land Acquisition and Conservation

Similar to SMP-1 and SMP-2, under SMP-3 Valley Water could develop new land acquisition- and conservation-based projects to create new PMAs as mitigation for impacts to jurisdictional habitats, and/or to provide mitigation for impacts to habitat for sensitive species. At this time, new land acquisition and conservation sites (outside of the sites described in Section 10.5.3 below) have not yet been identified by Valley Water, but potential sites are being investigated in parallel with the SMP-3 update process. The target reaches for new PMAs would be non-PMA areas that require frequent maintenance.

Remaining Mitigation from Island Ponds and Pajaro Freshwater Wetland

The Island Ponds project restored a total of 30 acres of tidal marsh habitat in Ponds A19, A20, and A21. Monitoring of this site demonstrated that it achieved all performance criteria and provides high-quality mitigation. Out of that 30 acres, 9 acres mitigated for SMP-1 impacts, another 12 acres mitigated for impacts that occurred prior to SMP-1, and 0.032 acre mitigated for SMP-2 impacts. Approximately 8.4 acres of restored tidal marsh has no associated impact. Regulatory agencies have indicated that this 8.4 acres can mitigate for future SMP impacts. Similar to SMP-2, this 8.4 acres would mitigate at a ratio of 1.2:1. At this ratio, 8.4 acres of the mitigation site would give Valley Water a maximum of 7 acres that could be permanently mitigated by establishing new PMAs in SMP-3 impact areas that occur within habitat for Baylands species. Valley Water is currently delineating the areas in which they would like to set aside new PMAs using the Island Ponds as mitigation.

The Pajaro Freshwater Wetland mitigation project involved the creation of high-quality freshwater wetland near the confluence of Pajaro River and Uvas Creek. This project established 10.14 acres of freshwater wetland. Some of this wetland area was used as part of the mitigation package that established the PMA during SMP-1. However, there are 3.7 acres of this site that have not yet been applied to impacts. These 3.7 acres will

be used for impacts to freshwater wetlands associated with establishment of new PMA in the Pajaro River basin that are located within the Central Coast RWQCB jurisdiction.

Note that some of the 8.4 acres of restored tidal marsh from the Island Ponds project and some of the 3.7 acres of freshwater wetlands from the Pajaro Freshwater Wetland project may be used to mitigate for impacts before SMP-3 permits are issued. The amount of mitigation available at these projects will be evaluated for applicability to establish new PMAs.

Potential Payment of VHP Impact Fees and/or Purchase of ILF Credits (Option Still in Planning Phase)

As noted in Section 10.4 above, Valley Water has been working with the Santa Clara Valley Habitat Agency (Habitat Agency) to explore how SMP activities might be incorporated into the VHP through the VHP amendment process. If SMP-3 activities are eventually covered under the VHP, Valley Water will pay VHP impact fees to provide permanent or temporary mitigation for impacts to species covered by the VHP. The Habitat Agency is currently in the process of amending the VHP, and it may be several years before Valley Water can obtain coverage for SMP-3 habitat impacts under the VHP.

Under SMP-2, Valley Water has primarily avoided direct impacts to individuals of most VHP-covered species through implementation of impact avoidance and minimization measures (AMMs) and BMPs. If the VHP amendment includes coverage of additional species, then payment of VHP impact fees would also compensate for impacts the SMP might have on those species as well. During preparation of the SMP-3 Subsequent EIR, Valley Water will also evaluate whether the payment of VHP impact fees provides adequate mitigation for impacts to other, non–VHP-covered species (i.e., whether the VHP's conservation program, funded in part by SMP impact fees, adequately conserves some non–VHP-covered species). Payment of VHP impact fees may be a more efficient means for offsetting impacts to VHP-covered species and their habitats. However, the VHP will require the payment of fees in accordance with the types and acreage of all habitat or "land cover" adversely affected by SMP-3 maintenance activities, including areas outside of waters of the U.S./state and areas where no impacts on covered species have occurred. Impacts to waters of the U.S./state may be mitigated through the purchase of ILF credits.

10.5.2 Annual Mitigation Approaches

Encampment Cleanup and Bank Rehabilitation

In recent years, Valley Water has observed a dramatic increase in encampments, generated trash, debris, hazardous pollutants, and encampment-caused wildfires on Valley Water–managed creeks, channels, and lands. Collectively, the removal of riparian vegetation (both intentionally during creation and "maintenance" of encampments and

unintentionally as a result of fires, dumping trash, and trampling) and the abundance of trash are perhaps the most readily noticeable environmental issues in creeks throughout many of the urban and suburban areas of Santa Clara County. The growth of encampments and trash deposits have led to increased and substantial water quality and habitat impacts to the region's streams and flood protection channels. Fires originating at encampments have also resulted in extensive loss of riparian habitat.

For SMP-3, Valley Water may conduct encampment cleanup activities to compensate for habitat impacts. Different regulatory agencies have different scopes of authority and jurisdiction with regard to how creek cleanup activities may potentially be applied as mitigation for SMP-3 activities. Encampment cleanup includes the removal of trash, debris, and hazardous pollutants generated by encampments in riparian areas (conducted in conjunction with local municipalities and local agencies, as necessary) and the removal of human-caused, inorganic trash that is in, or positioned to enter, aquatic and riparian habitats.

Currently, Valley Water routinely removes encampment-related trash across an approximately 630-acre area, amounting to approximately 100 tons of trash per month.

In the 9-year period 2013-2021, Valley Water removed nearly 113,000 cubic yards of trash, which is enough to fill 2,651 standard-size shipping containers. In addition, Valley Water has documented approximately 30 acres of riparian habitat loss or significant degradation in recent years during SMP-2 resulting from fires that originated at encampments.

The methodology for calculating mitigation credit for encampment cleanups would be based on the volume of trash and debris removed (in cubic yards). In the event that Valley Water were to revegetate areas affected by encampments after cleanup work is completed, Valley Water could receive additional mitigation credit for the additional enhanced or restored area. Such details would need to be coordinated with the appropriate resource agencies.

Valley Water will use encampment cleanup as mitigation for SMP activities that potentially affect vegetation, habitat, water quality, or other beneficial uses, according to what is considered acceptable mitigation by specific regulatory or resource agencies. Due to the extensive indirect impacts of such encampments caused by fire, trampling of vegetation, and water quality issues related to trash and human waste, Valley Water proposes to provide encampment cleanup activities as mitigation at a 1:1 ratio, where one cubic yard of encampment cleanup would compensate for 54 square feet of impact. This ratio is based on the concept that 1 cubic yard of trash spread at a depth of six inches would cover an area of 54 square feet. This mitigation will occur in the same watershed where the impact occurs. Valley Water will confirm the appropriate methodology for accounting of encampment cleanup mitigation with all relevant regulatory agencies.

Valley Water may also repair and rehabilitate stream banks affected by encampment-related excavation as mitigation for temporary or permanent bank stabilization impacts. If the encampment-related repair activity is to rehabilitate an excavated bank that is not considered necessary for flood protection, then mitigation credit would be applied for bank repair activities at a 1:1 ratio. If the encampment-related bank repair activity is required for flood protection purposes, the repair would be considered a neutral maintenance activity for in-kind repairs (or repairs that are less impacting than the original bank design) and would not require mitigation. Mitigation credit for this type of activity would be based on actual measured area (in square feet) rehabilitated. Because different regulatory agencies have different mandates, specific details of how this mitigation would apply would be coordinated with individual agencies.

Grant Program for Local Watershed Groups

Valley Water is also considering developing a local grant or partnership program to help fund and implement watershed improvement projects led by local watershed groups.

Example projects that this program may support include habitat restoration, erosion control, and water quality improvement projects in the Program area.

Should this mitigation option be developed, Valley Water would need to develop a database of viable mitigation projects led by local nonprofit agencies and resource conservation districts. The database would specify the types of water quality, habitat, and ecosystem benefits that would be provided and indicate how those projects would provide suitable mitigation for SMP-3 activities.

The specific mechanisms of how such a grant program would be operated are still under consideration.

This option would provide mitigation for removal of vegetation less than 6 inches dbh, sediment removal activities, and bank stabilization activities that would result in permanent impacts to wetlands and other waters of the U.S./state. Because different regulatory agencies have different mandates, specific details of how such a watershed grant program would provide mitigation for SMP-3 activities would be coordinated with individual agencies. However, to request implementation of a grant or partnership program to mitigate for SMP impacts, Valley Water will submit a mitigation and monitoring plan to the agencies. If approved as mitigation for SMP impacts, Valley Water will be responsible for ensuring that the project and its associated monitoring and reporting are completed in accordance with the project's mitigation and monitoring plan.

Trash Removal

Anthropogenic trash removal work that occurs outside of encampment cleanup activities may serve as mitigation for vegetation removal and sediment removal activities that result in impacts to wetlands and other waters of the state. Removing trash helps improve water quality and aquatic habitat for plant and terrestrial species. Trash removal

will serve as mitigation and will occur in the same watershed where the impact occurred. The methodology for calculating mitigation for trash removal will be based on the volume of trash removed (cubic yards), as described in "Encampment Cleanup and Bank Rehabilitation." Because different regulatory agencies have different mandates, specific details of how trash removal would provide mitigation for SMP-3 activities would be coordinated with individual agencies.

10.5.3 Mitigation for Impacts to Sensitive Species and Their Habitats

This section summarizes mitigation options available for compensating impacts to sensitive species and their habitat. Table 10-4 describes in detail the various types of mitigation opportunities that could be applied. As described in Section 10.4, at least some SMP activities may be considered "covered activities" under the VHP amendment currently in process. If SMP activities become covered activities under the VHP, then species impacts would be compensated through payment of VHP impact fees; no further compensatory mitigation would be necessary for such impacts.

However, until the VHP amendment is approved, or if the VHP amendment excludes SMP activities, or if the VHP amendment does not include all SMP impacts on VHP-covered species, then VHP impact fees may continue to be paid through the Habitat Agency's Voluntary Fee Payments Policy (Habitat Agency 2014) for SMP-3 activities resulting in permanent impacts to habitat for VHP-covered species. Covered species include Bay checkerspot butterfly, burrowing owl, California tiger salamander, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, least Bell's vireo, tricolored blackbird, San Joaquin kit fox, and several plants (see Attachment C). Monarch butterfly, Crotch's bumble bee, and mountain lion are species that are expected to be covered under a future VHP amendment. In addition, any project-specific mitigation provided for the SMP-3 (as described in Sections 10.5.1, 10.5.2, and 10.6) that also provides habitat for sensitive species may be considered suitable mitigation.

As noted in Table 10-4, remaining credits from tidal restoration at the Island Ponds may be used to compensate for impacts to tidal species at a ratio of 1.2:1.

Multi-benefit projects described in Section 10.6 would provide mitigation for impacts to salmonid habitat features in anadromous salmonid creeks. These projects would provide mitigation for impacts to salmonid habitat features that are categorized as coarse sediment, large woody debris, or instream complexity. These three habitat feature categories are independent of one another and a maintenance activity may have impacts on multiple separate habitat feature categories. These habitat feature categories are described in greater detail in Chapter 9 (large woody debris) and in Attachment G (coarse sediment and instream complexity).

Finally, land acquisition, preservation, and management of land providing habitat for listed species (e.g., California tiger salamander, California red-legged frog, and sensitive plants) would also provide a suitable form of mitigation. This approach is described in Section 10.5.1.

No compensatory mitigation is necessary under the SMP-3 for impacts to bald eagles, golden eagles, or Swainson's hawks. SMP activities do not result in substantive[3] habitat impacts to these species; in the unlikely event that maintenance activities may affect an occupied nest of one of these species (e.g., due to the removal of a hazard tree supporting a nest), the activity will not be performed under the SMP-3 and Valley Water will obtain any necessary take authorization permits from CDFW and USFWS and provide any necessary mitigation separately.

In some cases, vegetation management actions can be conducted in a manner that improves the site's function as habitat for sensitive species. For example, targeted removal of certain invasive vegetation may allow expansion of other plant species that function as habitat for a particular sensitive species. Where vegetation work improves a site's function as habitat for sensitive species, Valley Water may propose to conduct the work without incurring a compensatory mitigation requirement. In cases where Valley Water is proposing to mitigate vegetation work by modifying the work to improve the site's value as sensitive species habitat, Valley Water will describe the species that is expected to benefit and the way in which vegetation work will benefit that species in the NPW.

[3] Substantive habitat impacts means that not even a single nesting pair would have their nesting or foraging habitat reduced or disturbed to such an extent as to result in the loss of an active nesting territory or a loss of productivity.

TABLE 10-4
Mitigation Opportunities for Sensitive Habitats and Special-status Species Affected by SMP-3 Activities

Resource Requiring Mitigation	Determination of Impact Area	Mitigation Type	Mitigation Factor (area or volume)	Activities Potentially Affecting the Resource
Anadromous salmonid creeks (coarse gravel)	A Valley Water fisheries ecologist will assess the volume of coarse substrate removed	Salmonid habitat restoration projects	Will be detailed in project description	Sediment removal (See Attachment G, Section 2)
Anadromous salmonid creeks (large woody debris)	A Valley Water fisheries ecologist will assess the volume of large woody debris removed	Salmonid habitat restoration projects	Will be detailed in project description	LWD removal (see Chapter 9) including LWD removal conducted as an independent activity or in association with another activity (eg sediment removal)
Anadromous salmonid creeks (instream complexity)	A Valley Water fisheries ecologist will assess the type and extent of instream complexity feature(s) affected	Salmonid habitat restoration projects	Will be detailed in project description	Sediment removal, bank stabilization (See Attachment G, Section 3)
Burrowing owl	Permanent impacts on breeding habitat (including foraging habitat near nest sites) will be determined based on VHP standards (i.e., impacts within 0.5 mile of nest sites used within the prior 3 years, as determined by Habitat Agency surveys)	Payment of burrowing owl impact fees to Habitat Agency	N/A	Access road construction

Resource Requiring Mitigation	Determination of Impact Area	Mitigation Type	Mitigation Factor (area or volume)	Activities Potentially Affecting the Resource
California tiger salamander	For VHP-covered SMP activities, it is unnecessary to determine or quantify impacts to this species' habitat. For non–VHP-covered activities: • For USFWS, impacts will be determined by overlaying SMP activity areas on VHP habitat modeling for this species (within the VHP area) or SMP mapping of this species' distribution (outside the VHP area). • For CDFW, impacts will be determined by overlaying activity areas on SMP mapping of this species' distribution.	Payment of VHP land cover impact fees or habitat preservation and management	2:1 mitigation ratio based on acreage, if mitigation is provided through project-specific habitat preservation and management	Non-aquatic herbicide application, transport to and from site, storage of construction materials and equipment, construction of temporary ramps, filling or removal of levee cracks, excavation of banks and installation of hardened materials, grading with heavy equipment, levee surface compaction, reconstruction of levee slopes, placement of physical barriers on levee surface, slurry filling and compaction of rodent burrows, use of fumigants
California red-legged frog, foothill yellow-legged frog	For VHP-covered SMP activities, it is unnecessary to determine or quantify impacts to these species' habitats. For non–VHP-covered activities, impacts will be determined by overlaying SMP activity areas on VHP habitat modeling for these species (within the VHP area) or SMP mapping of these species' distribution (outside the VHP area).	Payment of VHP land cover impact fees or habitat preservation and management	2:1 mitigation ratio based on acreage, if mitigation is provided through project-specific habitat preservation and management	Vegetation removal, LWD removal, management of animal conflicts

Resource Requiring Mitigation	Determination of Impact Area	Mitigation Type	Mitigation Factor (area or volume)	Activities Potentially Affecting the Resource
Least Bell's vireo, yellow-breasted chat	For VHP-covered SMP activities, it is unnecessary to determine or quantify impacts to these species' habitats. Although the chat is not VHP-covered, VHP mitigation for impacts to the vireo will compensate for impacts to the chat as well. For non–VHP-covered activities, impacts will be determined by overlaying SMP activity areas on SMP mapping of potentially high-quality habitat for the least Bell's vireo and yellow-breasted chat.	Payment of VHP land cover impact fees or habitat preservation and management	2:1 mitigation ratio based on acreage, if mitigation is provided through project-specific habitat preservation and management	Vegetation removal, sediment removal (primarily due to access)
Pallid bat	A Valley Water biologist will determine, based on pre-activity surveys and existing data, whether an activity will result in the loss of a tree containing a pallid bat maternity roost.	Construction and installation of an alternative bat roost structure	N/A (the size of the alternative roost structure will be based on the number of bats using the affected roost)	Vegetation removal, sediment removal

Resource Requiring Mitigation	Determination of Impact Area	Mitigation Type	Mitigation Factor (area or volume)	Activities Potentially Affecting the Resource
Special-status plant species	A Valley Water botanist will determine whether special-status plants are present using existing survey data/ mapping of known plant occurrences and pre-activity field surveys for special-status plants. The botanist will estimate the impact on the basis of the highest number of individuals known to be present within the impact area by comparing preimpact mapping with a postimpact assessment, based on field surveys and/or GIS overlays. If VHP impact fees are paid for a particular SMP activity (e.g., for impacts to other habitats or species), the botanist will determine whether contribution to the VHP's conservation program is likely to adequately compensate for impacts to special-status plants, based on the species affected and its expected distribution and abundance in the VHP's conservation area.	Payment of VHP land cover impact fees (for impacts to other habitats or species; VHP-covered plants will not be affected by SMP activities) or preservation, enhancement, and management of occupied habitat	For non-VHP project-specific mitigation, the mitigation area must (a) already support equal or greater numbers (and health) of individuals of the species in question and (b) contain sufficient unoccupied habitat to allow for an increase in populations, the increase being at least equivalent to the number affected, through habitat enhancement and management	Vegetation removal, sediment removal (primarily due to access)

Resource Requiring Mitigation	Determination of Impact Area	Mitigation Type	Mitigation Factor (area or volume)	Activities Potentially Affecting the Resource
Tidal wetland/ aquatic species	A Valley Water biologist will estimate the area of impact to these habitats and species visually or using GIS, based on field mapping of extent of these habitats and species prior to maintenance and field mapping (or GIS overlay) of the footprint of the actual impact area	Tidal wetland restoration that has already occurred at the Island Ponds will count as permanent mitigation (in perpetuity) for potential impacts to this habitat (see Section 10.5.1)	1.2:1 (acreage)	Sediment removal
Yellow warbler	The area of habitat impacts will be determined based on a field assessment of the area of impacts to occupied breeding habitat	Payment of impact fees based on the fee schedule in the VHP (for VHP-covered impacts to riparian habitat) or restoration of riparian habitat in areas with little adjacent development, where yellow warblers may breed (for non–VHP-covered impacts)	1:1 (acreage	Herbicide, pruning, vegetation removal, sediment removal (primarily due to access)

Notes: CDFW = California Department of Fish and Wildlife; GIS = geographic information system; Habitat Agency = Santa Clara Valley Habitat Agency; LWD = large woody debris; N/A = not applicable; USFWS = U.S. Fish and Wildlife Service; VHP = Santa Clara Valley Habitat Plan;

10.6 ADDITIONAL SMP-3 MITIGATION OPTIONS

This section describes additional mitigation options that may be implemented as individual, stand-alone restoration projects that could provide either permanent or temporary, annual mitigation for SMP-3 activities. These restoration projects could be implemented in addition to developing other PMAs or paying VHP impact fees, as described above. In addition to the options listed below, Valley Water may propose other mitigation options as they arise during the course of the Program.

It should be noted that in order to obtain USACE approval for a mitigation project, Valley Water will be required to submit a Mitigation Plan to the USACE. The Mitigation Plan will be developed in accordance with the 2008 Mitigation Rule (33 CFR Section 332.4(c)) and will include the following:

a) Type of mitigation (i.e., purchase of mitigation credits, permittee-responsible mitigation under a watershed approach, or permittee-responsible mitigation on-site/off-site and in-kind/out-of-kind);

b) If the type of mitigation involves the purchase of a mitigation bank or in-lieu fee credits than the following will be included:

   i) A map showing the service area of the bank or in-lieu fee and the projected impact locations;

   ii) The type(s) of credits available;

   iii) The amount, type, and location of projected impacts (in particular, permanent vs. temporary, wetland vs. other waters, and San Francisco Bay watershed vs. Pajaro River watershed); and

   iv) The proposed mitigation ratio (purchases of advance in-lieu fee credits require a higher ratio to account for temporal loss).

c) If permittee-responsible, a mitigation plan developed in accordance with the 2008 Mitigation Rule (as outlined in 33 CFR Section 332.4(c)).

10.6.1 Coyote 10B

Coyote 10B is an abandoned gravel pond that could be enhanced to provide seasonal wetland and riparian habitat. The Coyote 10B site is located upstream of the Hwy 101/State Route 85 interchange on the east side of Valley Water's Coyote Dam. In 2005, the pond was measured at an average depth of approximately 8-10 feet and a maximum depth of 13 feet. The Coyote 10B site has the potential to provide approximately 7 acres of seasonal wetland, riparian habitat, and high-water refugia for fish as SMP-3 mitigation. Additionally, this project would be one of several mitigation projects occurring along Coyote Creek, including the Ogier Ponds Restoration Project and the Coyote Percolation Ponds Dam and Fish Passage Project (related to the FERC Order

Compliance Project and Anderson Dam Seismic Retrofit Project), thereby supporting watershed-wide restoration and enhancement activities.

10.6.2 Stevens Creek Evelyn Avenue Fish Passage Project

The Stevens Creek Evelyn Avenue Fish Passage Project (Evelyn Project) was initially constructed in 2015. As part of the SMP-2 mitigation package, Valley Water removed two channel spanning weirs that provided grade control. The weirs were located downstream of the Evelyn Avenue bridge and were believed to have caused sediment deposition, obstructing flows in the main creek channel. This resulted in fish being routed through a bypass culvert, which presented both depth and velocity barriers to steelhead passage (AECOM 2023).

The project implemented in 2015 included construction of a lateral boulder weir at the entrance to the high flow bypass, a concrete low-flow channel and four channel-spanning concrete cut-off walls beneath the Union Pacific Railroad (UPRR) bridge, and several steel sheet piles to control grade along the longitudinal profile of the creek. The channel bed and banks between the sheet piles and UPRR cut-off walls were filled with engineered streambed material (ESM) and channel embankment fill (AECOM 2023).

Several flood events in 2016-2017 led to erosion of nearly all of the ESM fill that had been placed in 2015, leaving the sheet piles and UPRR cut-off walls exposed and raising concerns from fisheries biologists about the resulting impacts to steelhead passage (AECOM 2023). Due to damage caused by the storms, this project did not succeed and it was not used as mitigation for SMP-2.

Valley Water is currently developing new designs for chutes, pools, and roughened channels upstream and downstream of the UPRR crossing, as well as design improvements to the channel profile, cross-section geometry, and ESM, for a reconstructed Evelyn Project. The goal of the new design approach is to provide a longer-term sustainable flow solution that supports fish migration in a creek zone that is highly dynamic and subject to geomorphic change during large flow events. An operations and maintenance guidance document for this project will be prepared as part of the final design and planning process.

The reconstructed Evelyn Project could potentially function as mitigation for SMP-3 impacts to steelhead, waters of the U.S./waters of the state, and other instream beneficial uses in the Lower Peninsula watershed.

10.6.3 Pickell's Dam Removal

Pickell's Dam was an obsolete concrete dam on Little Arthur Creek, a tributary to Uvas Creek in the northwestern section of the Pajaro River watershed. Little Arthur Creek is a spawning tributary for steelhead. Pickell's Dam impeded the migration of all life stages of steelhead to and from high-quality spawning habitat in the upper watershed as it was a barrier to passage. The dam also blocked the natural transport of spawning gravel and

LWD that are essential features of steelhead habitat. In addition to having adverse effects on steelhead passage and stream function, Pickell's Dam also inhibited the ability of other fish and wildlife species to move through the creek. Trout Unlimited, NMFS, and CDFW have all contributed to the development of designs for the removal of Pickell's Dam.

Removal of Pickell's Dam will function as mitigation for SMP-3 impacts to steelhead, waters of the U.S./waters of the state, and other instream beneficial uses in the Pajaro River watershed.

10.6.4 Revegetation Program

As with SMP-2, Valley Water may conduct riparian revegetation activities to compensate for permanent SMP-3 impacts on riparian habitat. Revegetation will establish and/or enhance habitat for native wildlife species while providing shade, sources of organic matter and coarse woody debris, improved root and soil structures, and other water quality benefits for aquatic species.

The typical planting palette for the revegetation program is shown in Table 10-5. Figure 10-1 presents an example of a revegetation plan cross-section, referencing plants listed in Table 10-5. Revegetation activities may require site preparation, including minor grading and topsoil preparation, and incorporation of soil amendments. As with SMP-2, Valley Water will strive to source container plants from nurseries that are in compliance with the *Guidelines to Minimize Phytophthora Pathogens in Restoration Nurseries* (Working Group for Phytophthoras in Native Habitats 2016). Restoration activities may also utilize seeds, plugs, and/or cuttings.

As shown in Table 10-2, revegetation mitigation ratios will be 1.1:1 for Modified Channels and 1.5:1 for Unmodified Channels, measured in square feet. Revegetation mitigation must be matched to riparian impacts within the same watershed.

Revegetation as mitigation of impacts associated with removal of non-invasive trees greater than 6 inches dbh requires additional mitigation balancing. For each non-invasive tree greater than 6 inches dbh that is otherwise healthy and requires removal, Valley Water must install one native tree on a mitigation site within the same basin. In most cases, removal of invasive trees will not incur any tree count matching requirement. Prior to tree removal, Valley Water biologists will assess the functions and values provided by the invasive tree slated for removal. If the tree is determined to provide unique functions and values, removal of the tree will be mitigated at a 1:1 ratio. If the tree does not provide unique functions and values, no compensatory mitigation is required.

As with SMP-2, in most cases, there is no requirement to match the impact tree count and the mitigation tree count by species. However, western sycamores (*Platanus racemosa*) greater than 6 inches dbh that are removed must be replaced with western

sycamores, and oaks (*Quercus* sp.) greater than 6 inches dbh that are removed must be replaced with a native species of oak (*Quercus* sp.).

TABLE 10-5
Typical Revegetation Palette

Symbol	Botanical Name	Common Name	Slope Planting Location
Trees			
AC	*Acer negundo*	Box elder	Low to mid, riparian and upland
AE	*Aesculus californica*	Buckeye	Mid to high, upland
AR	*Alnus rhombifolia*	Alder	Water's edge, low, riparian
PR	*Platanus racemosa*	Western sycamore	Low to mid, riparian and upland
PF	*Populus fremontii*	Fremont cottonwood	Low to mid, riparian
PT	*Populus trichocarpa*	Black cottonwood	Water's edge, low, riparian
PI	*Prunus ilicifolia*	Holly leaf cherry	Mid to high, upland
QA	*Quercus agrifolia*	Coast live oak	Mid to high, upland
QD	*Quercus douglasii*	Blue oak	High, upland
QL	*Quercus lobata*	Valley oak	Mid to high, upland
SL	*Salix laevigata*	Red willow	Water's edge, low, riparian
SLAS	*Salix lasiolepis*	Arroyo willow	Water's edge, low, riparian
SM	*Sambucus mexicana*	Elderberry	Mid to high, upland
Shrubs			
BS	*Baccharis salicifolia*	Mulefat	Low to mid, riparian and upland
ERNU	*Eriogonum nudum*	Naked buckwheat	Upland
HA	*Heteromeles arbutifolia*	Toyon	Mid to high, upland
RC	*Frangula californica*	Coffeeberry	Mid to high, upland
SE	*Salix exigua*	Sandbar willow	Water's edge, low, riparian
Low Plants, Vines			
ARC	*Artemesia californica*	California sage	Mid to high, upland

Symbol	Botanical Name	Common Name	Slope Planting Location
ARD	*Artemesia douglasiana*	Mugwort	Low to mid, riparian and upland
SYCH	*Symphyotrichum chilensis*	California aster	Low to mid, riparian and upland
CL	*Clematis ligusticifolia*	Virgin's bower	Mid to high, upland
EF	*Eriogonum fasciculatum*	California buckwheat	Mid to high, upland
EO	*Euthamia occidentalis*	Goldenrod	Low to mid, riparian and upland
PHNO	*Phyla nodiflora*	Lippia	Low riparian
ASFA	*Asclepias fascilcularis*	Narrowleaf milkweed	Riparian and upland
CYER	*Cyperus eragrostis*	Tall cyperus	Low riparian, water's edge
ACMI	*Achillea millefolium*	Yarrow	Mid to high, upland
GRHI	*Grindelia hirsutula*	Gumplant	High
HEPU	*Helenium puberulum*	Sneezeweed	Water's edge, low, riparian
CASP	*Carex* spp.	Sedge	Water's edge, low, riparian
EPCA	*Epilobium canum*	California fuschia	Upland
RCA	*Rosa californica*	California rose	Mid to high, upland
RU	*Rubus ursinus*	California blackberry	Low to high, riparian and upland
~~ELTR~~	~~*Elymus triticoides*~~	~~Blue wild rye~~	~~Low to high, riparian and upland~~
SYL	*Symphoricarpos albus*	Snowberry	Mid to high (shade), upland
BAGL	*Baccharis glutinosa*	Marsh baccharis	Water's edge, low, riparian
SCCA	*Scrophularia californica*	California bee plant	All
ESCA	*Eschscholzia californica*	California poppy	upland
*Grasses ~~(Seed)~~**			
	Hordeum californicum	Prostrate California Barley	All slope locations
	Elymus glaucus "Berkeley"	Berkeley' Blue Wildrye	All slope locations

Symbol	Botanical Name	Common Name	Slope Planting Location
	Elymus triticoides	Blue wild rye	Low to high, riparian and upland
	Bromus carinatus	California Brome	All slope locations
	Vulpia microstachys	Three Weeks Fescue	All slope locations
Optional			
STPU	*Stipa pulchra*	Purple needlegrass	High
JUPA	*Juncus patens*	Spreading rush	Upland
JUXI	*Juncus xiphioides*	Iris leaved rush	Water's edge, low, riparian
	Elymus X triticum	Sterile wheat	Temporary, all slope locations

* Grasses shown are those species included in Valley Water's erosion control mix.

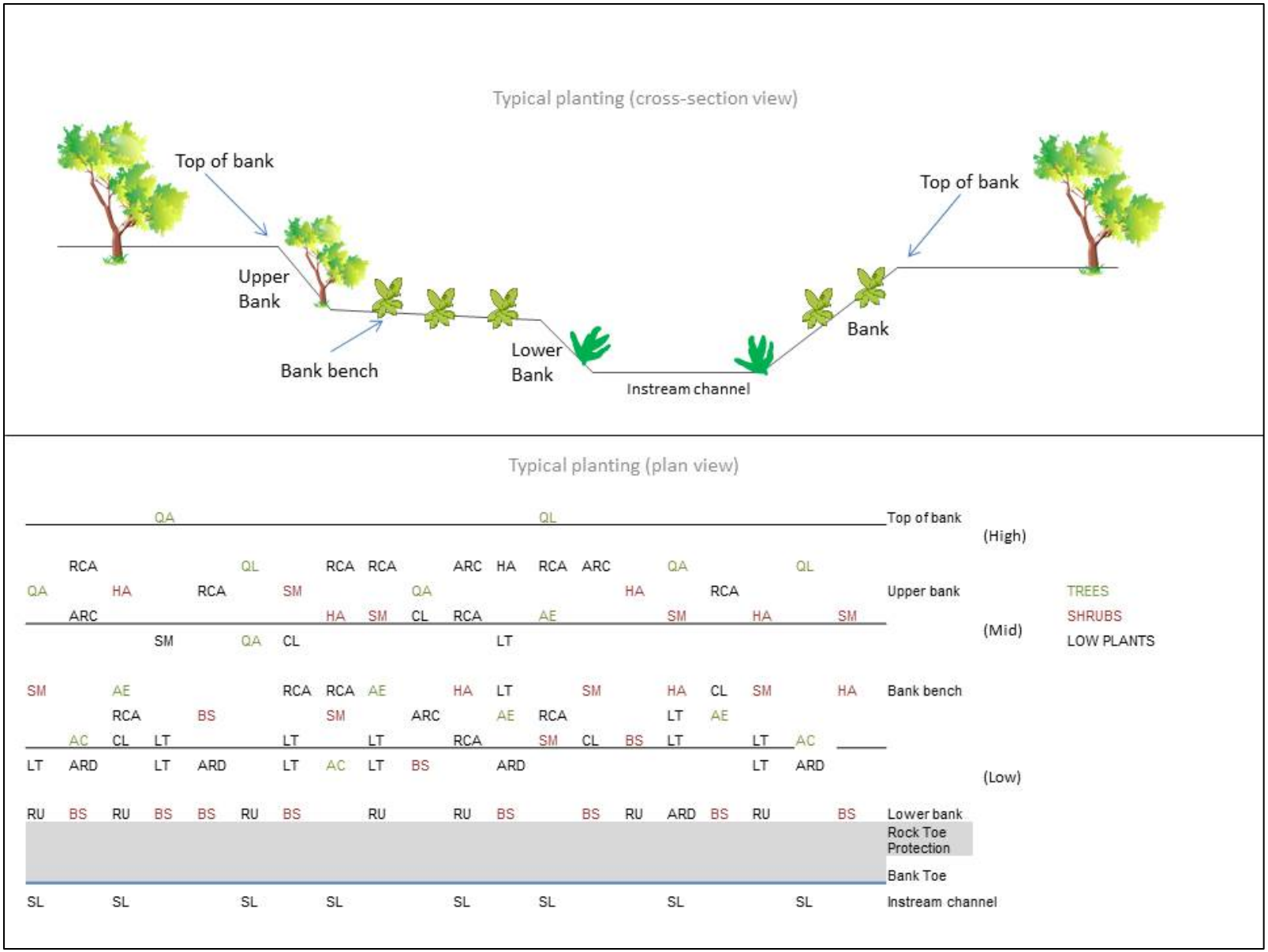

Figure 10-1: Typical Planting Plan

10.6.5 Concrete Removal

Concrete removal from stream banks or beds may serve as mitigation for bank stabilization activities resulting in permanent impacts on wetlands and waters of the U.S./state. This activity involves removing concrete from below OHWM and may involve removing concrete structures or fragments of concrete, regardless of their provenance. Concrete removal may be considered valid mitigation if softscape is left behind in the footprint of the concrete removal work area. In Modified and Unmodified Channels, concrete removal mitigation credit would be calculated based on the area of concrete removed. Because different regulatory agencies have different mandates, specific details of how concrete removal projects would provide mitigation for SMP-3 activities would be coordinated with individual agencies.

10.6.6 Salmonid Habitat Restoration Projects

Valley Water proposes to construct an additional large-scale salmonid habitat restoration project, involving either passage improvement; habitat feature development, such as LWD, gravel, and instream complexity; or other methods to improve stream function for salmonid habitat. The Coyote 10B, Stevens Creek Evelyn Avenue Fish Passage, and Pickell's Dam Removal mitigation projects are examples of projects that restore salmonid habitat.

Implementing an upfront mitigation project would provide Valley Water the flexibility to conduct routine maintenance activities on an as-needed basis without having to develop a series of smaller mitigation projects on an annual basis. Because different regulatory agencies have different mandates, specific details of how salmonid habitat restoration projects would provide mitigation for SMP-3 activities would be coordinated with individual agencies, particularly the National Marine Fisheries Service.

LWD removal is an anticipated SMP-3 maintenance activity that would require mitigation. The SMP considers LWD as downed trees with a diameter of at least 12 inches and a length of at least 6 feet that have fallen below OHWM. Valley Water anticipates the need to cut or remove up to 200 cubic yards of LWD in the Lower Peninsula, Guadalupe, Coyote Creek, and Pajaro River watersheds during the SMP-3 planning period, as well as conducting maintenance activities that would result in permanent impacts on anadromous salmonid creeks.

~~10.6.7 Stream Reach Characterization Sheets~~

~~As an additional mitigation approach for addressing impacts to the riparian corridor, Valley Water may develop reach characterization sheets for areas where frequent maintenance activities are projected to occur during the 10-year SMP-3 period. These sheets would characterize the biological resources, water quality conditions, and overall ecological function of a particular stream reach; indicate ongoing and future maintenance needs; identify whether opportunities exist to avoid and minimize impacts~~

~~on sensitive habitat areas; and evaluate whether potential restoration opportunities exist within the reach. The characterization sheets may also be used to identify and map large trees with high importance and ecological value and describe potential opportunities for enhancing these trees. A specific number of reach sheets would be developed and provided to regulatory agencies as part of Valley Water's overall SMP-3 mitigation approach.~~

~~Reach characterizations will be helpful in planning to maintain a site in a state of ecological equilibrium. Once a reach characterization has been developed, vegetation management work within the reach can be aligned with the longer-term reach vision. In this way, the maintenance work can be directed toward supporting the longer-term ecologic goal for the reach. If vegetation management within a reach can be directed toward achieving that reach's target ecological function and value, then the maintenance work may be exempt from compensatory mitigation requirements. To be exempt from mitigation requirements due to alignment with reach characterizations, proposed work activities must not involve removal of trees greater than 6 inches dbh, result in conversion of habitat from one type to another, or adversely affect the site's function as habitat for special-status species.~~

~~10.6.8~~ 10.6.7 Post-Wildfire Recovery

Enhancing ecosystem recovery following particularly large and destructive riparian corridor wildfires requires a substantial commitment of Valley Water's resources. In these situations, Valley Water may propose restoring ecosystem function following a wildfire as a mitigation action. Valley Water will submit the wildfire recovery plan as part of the NPW process along with a discussion of the nature of the mitigation credit that is being proposed. Mitigation activities may include, but are not limited to, revegetation and hydroseeding to reduce erosion, invasive plant species control, road repair, and removing critical safety hazards (e.g., dead or dying trees). These activities would promote and support habitat for animal and plant species and reduce risk of additional fires that could further damage habitat. When wildfire recovery is implemented as a mitigation action, the plan will also describe success criteria, monitoring processes, and site maintenance activities. Because different regulatory agencies have different mandates, specific details of how post-wildfire recovery and restoration activities would provide mitigation for SMP-3 activities would be coordinated with individual agencies.

~~10.6.9~~ 10.6.8 Payment of VHP Fees

Depending on the timing of the current VHP amendment process, SMP maintenance activities may not be covered under the VHP during the initial years of the SMP-3 period. However, the payment of VHP fees by Valley Water would be appropriate to mitigate SMP-3 impacts to VHP-covered species because these fees would directly benefit covered species in the South Bay region. This mitigation approach is consistent with the Habitat Agency's Voluntary Fee Payments Policy. The Habitat Agency will be able to use these voluntary fees, in conjunction with fees from other projects, to implement

conservation projects in the South Bay region. In addition, in the event that Valley Water needs to remove large invasive or native trees in VHP-covered areas and depending on the habitat value provided by such trees, Valley Water may also pay VHP impact fees for the acreage of land cover that is modified by invasive and native tree removal activities.

10.7 MITIGATION MONITORING

Valley Water will monitor mitigation sites to document that SMP mitigation is operational and successfully providing the functions and values needed to offset potential SMP impacts. For Valley Water-led on-site and off-site mitigation projects (e.g., revegetation projects, salmonid habitat restoration projects, post-wildfire recovery projects), Valley Water will be responsible for monitoring such projects for a period of 3-5 years, depending on the type of mitigation project. For land acquisition and land management options providing mitigation for certain impacts in perpetuity, a long-term management plan will be developed to ensure that monitoring, maintenance, and management of conservation lands are consistent with the mitigation goals; such plans will be attached to Valley Water's NPWs. For the grant program supporting local watershed groups' mitigation projects in which Valley Water would serve as a funding partner, it is anticipated that the local partner will monitor and provide reporting on the site for 3-5 years. While the watershed partner would have primary responsibility to monitor site conditions, Valley Water will have responsibility to communicate monitoring results annually as part of the ASR reporting process. In the event that the local partner is unable to continue monitoring and/or maintaining the site in accordance with the monitoring and maintenance plan, Valley Water will be responsible for ensuring continued compliance with the plan.

The NPW and ASR reporting actions are described in more detail in Chapter 11. Specific details regarding Valley Water's monitoring responsibilities will be included in each year's NPW and ASR for routine maintenance conducted. Mitigation monitoring reports will also be included in the ASRs.

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CHAPTER 11. PROGRAM MANAGEMENT AND REPORTING

11.1 PURPOSE

This chapter describes the SMP-3 management and reporting process.

In general, maintenance activities take place on an annual cycle. Valley Water's annual stream maintenance planning, implementation, and reporting process occurs in three phases: (1) developing the NPW, (2) implementing the annual routine stream maintenance work, and (3) developing the ASR. Maintenance work is proposed either as part of the NPW or as otherwise identified throughout the year through individual work orders.

Internally at Valley Water, work orders are used to describe, request, and implement stream maintenance projects. Work orders describe the project, implementation schedule, project cost, permit requirements, and other special conditions. Work orders will continue to be the primary internal method to organize, conduct, and track maintenance projects.

11.2 NOTICE OF PROPOSED WORK

This section describes the annual NPW process and contents of the notification package. The NPW identifies which work activities require notification, the agencies to be notified, project specifications, agency review process, and the process to document project changes. The NPW submittals include work descriptions along with the anticipated impacts on wetlands and other waters of the U.S./state, riparian habitat, and habitat supporting special-status species. The actual impacts that occur during the completion of the projects are assessed and included in the ASR.

Since spring 2022, Valley Water has developed a comprehensive cloud-based SMP database. Resource agencies have access to the database for the purposes of reviewing NPWs and ASRs. For additional information regarding the types of data collected and stored in the database, see Section 11.7 below.

11.2.1 Projects Requiring Notification

Table 11-1 indicates which maintenance work activities require notification according to the authorizing regulatory agency. Some activities do not require pre-work notification but may still require summary reporting in the Annual Summary Report (see Attachment J).

TABLE 11-1
Projects Requiring Notification According to Agency Jurisdiction

Purpose and Objective of Maintenance Activity	USACE[1]	CDFW[2]	RWQCBs[3]	NMFS[4]	USFWS[5]	BCDC[6]
Flow Conveyance						
Sediment removal	X	X	X	X	X	X
LWD cutting or removal[7, 8]	X	X	X	X	X	
In-channel (below OHWM) vegetation removal (<6" dbh)		X	X	X	X	X
In-channel (below OHWM) herbicide application[9]		X	X	X		
In-channel (below OHWM) tree removal (>6" dbh)		X	X	X	X	X
Access to Valley Water Flood Control Facilities						
Mowing[10]		X			X	
Herbicide application[9] (i.e., ~~along maintenance roads,~~ access ramps, maintenance footpaths, and fence lines)		X				
Vegetation removal (<6" dbh)		X	X			
Structural Integrity of Facilities						
Bank stabilization	X	X	X	X	X	X
LWD cutting or removal[7, 8]	X	X	X	X	X	
Management of Animal Conflicts						
Physical alteration of the facility (i.e., compaction of levee faces, filling burrows with soil/slurry material, physical barriers installation)	X	X	X		X	X
Bat exclusion (Upper Llagas Creek Flood Protection Project)		X			X	
Bird Nest Deterrence		X			X	

Purpose and Objective of Maintenance Activity	USACE[1]	CDFW[2]	RWQCBs[3]	NMFS[4]	USFWS[5]	BCDC[6]
Habitat modification		X	X		X	
Lethal control using fumigants		X	X			
Lethal control using trapping		X			X	
Fire Resilience						
Mowing[10]		X			X	
Herbicide application		X	X		X	
Vegetation removal and tree removal		X	X		X	X
Ecological Health – Other						
Selective tree removal (<12" dbh)		X	X	X	X	X
Hardscape removal (for mitigation)	X	X	X	X	X	X
Minor Maintenance[11]						
Sediment removal	X	X	X	X	X	X
Road maintenance (below top of bank only)		X	X		X	X
Repair of existing structures/fences/gates[12]		X	X	X	X	X
Palo Alto tide gates maintenance	X	X	X	X		X

Notes: X denotes the regulatory approval needed for the work activity.

BCDC = Bay Conservation and Development Commission; CDFW = California Department of Fish and Wildlife; dbh = diameter at breast height; LWD = large woody debris; NMFS = National Marine Fisheries Service; OHWM = ordinary high water mark; RWQCBs = Regional Water Quality Control Boards; sq ft = square feet; USACE = U.S. Army Corps of Engineers; USFWS = U.S. Fish and Wildlife Service

1. Generally applies to work within waters of the U.S. (including tidal areas), generally below the OHWM. **Note:** All SMP activities below the Mean High Water Line in tidal areas may require USACE authorization. Sediment removed in the manner of "pure excavation" is not regulated by USACE, although any dewatering activities that include the installation of a temporary coffer dam are regulated by USACE. USACE does not regulate vegetation management activities within bank stabilization and sediment removal activities. However, the USACE does regulate the installation of temporary access ramps or dewatering structures below OHWM, which may be associated with vegetation management activities.
2. Includes all areas and species within CDFW jurisdiction (California Fish & Game Code Section 1600 et seq.). Notification will be made to CDFW for any work when a qualified biologist determines that there may be "take" or the potential to "adversely affect" a state-listed species.
3. Only applies to work within waters of the state, which includes the area below top of bank of the outermost bank or levee and the riparian corridor to the upland dripline of riparian vegetation.

Purpose and Objective of Maintenance Activity	USACE[1]	CDFW[2]	RWQCBs[3]	NMFS[4]	USFWS[5]	BCDC[6]

4. Only applies to anadromous salmonid/sturgeon streams.
5. Only applies in federally listed species-specific areas.
6. Only applies within BCDC jurisdiction.
7. Agencies will be notified within one week of LWD cutting or removal projects being performed, and these projects will be included in the ASR. LWD associated with debris jams/trash rafts may be removed with regulatory agency pre-approval.
8. LWD cutting or removal will require notification to the regulatory agencies when a qualified biologist determines that there may be “take” or the potential to “adversely affect” any state-listed or federally listed species.
9. Except on maintenance roads.
10. Only applies in new work areas in sensitive habitats such as wetlands or woody riparian vegetation; for mowing of special-status plants; or for mowing and/or pruning of habitat for the least Bell’s vireo, California tiger salamander, California red-legged frog, California Ridgway’s rail, or salt marsh harvest mouse.
11. Only if impacts to wetland/riparian vegetation may be greater than 436 sq ft (0.01 acre) but less than 3,485 sq ft (0.08 acre).
12. Regulatory agencies will be notified of in-kind repairs that are replacing hardscape in anadromous salmonid channels even if there are no riparian/wetland vegetation impacts.

11.2.2 Agency Notification and Review Process

By April 15 of each year, Valley Water will submit the NPW to the relevant regulatory agencies that have jurisdictional authority or oversight of that year's planned maintenance projects. Table 11-1 summarizes the general jurisdictional authority for each maintenance activity, although this may vary from project to project. The NPW will describe proposed maintenance activities, locations, natural resource conditions, and any other key resource issues at each site. The NPW will also describe which maintenance projects will result in temporary and permanent impacts on wetlands or other waters of the U.S./state. Specifically, the NPW will include the following:

- Central latitude and central longitude.
- Whether any work is proposed below OHWM, HTL, or MHW.
- Whether the project area is subject to tidal influence.
- Acreage and type of impacts to waters of the U.S./state within the project area.
- For each discharge of dredged or fill material, the NPW will include
    - Acreage and linear running feet (parallel to the flow of water) of the area that will receive a discharge of fill or dredged material.
    - Type of aquatic resources (e.g., wetlands or other waters).
    - If the aquatic resources will be returned to pre-project conditions.
    - If the proposed discharge of fill or dredged material is permanent or temporary (i.e., temporary fill is removed within one growing season).
    - If the impact will result in a loss of waters of the U.S. (i.e., conversion of an aquatic resource to upland that is not restored within one growing season).
    - If the impact will result in the conversion of one type of waters of the U.S. to another (e.g., the conversion of wetland to riverine habitat).
    - If the impact involves the expansion of hardscape within waters of the U.S. (vegetated or non-vegetated).
- Applicable BMPs that would be implemented to avoid/minimize impacts.
- Proposed compensatory mitigation for impacts on jurisdictional habitats and habitat supporting special-status species.

The NPW will provide the necessary information required by the regulatory agencies to evaluate the projects for coverage under the SMP. Attachment I includes a draft template that Valley Water will use for developing the NPW. Agencies will have 45 days to respond and issue a Notice to Proceed. Agency

staff have committed to providing a response for projects within their jurisdiction within the allotted time period.

At Valley Water's discretion, a second NPW submittal, NPW 2, may be submitted later in the work season to address projects not included in the initial (April 15) NPW. This may be necessary due to late season storms or other conditions in the field that result in the need to perform additional projects. NPW 2 will be submitted no later than August 1 and will follow the same process and timeframe. While this additional submittal provides some flexibility to manage the annual work cycle, it will be a smaller, focused list of projects intended to address and appropriately prioritize newly identified maintenance projects.

While the number of notification submittals is not limited, the typical annual practice would include one main submittal (NPW 1) on or before April 15 and an additional submittal (NPW 2) prior to August 1 if necessary. Additional projects may be submitted prior to or after the submittal of NPW 2 to address work priorities and scheduling concerns.

11.2.3 Notification of Project Changes

Project changes may arise after the NPW submittal. Such changes typically include project length, bank repair method type, and changes in dewatering activities. When a project changes, the following information will be provided to the relevant regulatory agencies as appropriate:

1. Project length – Waivers for extending the length of a project may be granted through a waiver request following the same format that is used for a waiver submitted in the NPW, as described in Chapters 5 and 6.

2. Bank repair method type – Similar method types may be changed between the NPW and ASR. If the method is within the same category type (hardscape, softscape, or hybrid) or is a softer method, it will be noted in the ASR and no prior notification will be required. If a harder method is proposed, the regulatory agencies will be notified for approval.

3. Dewatering/diversion system method and plan – For projects that require substantial modification to and/or did not initially include a dewatering/diversion plan in the NPW but that now require dewatering/diversion, the regulatory agencies will be notified for approval.

For any other project changes that may be requested, Valley Water staff will send an email to all agencies and state in the body of the email which agencies have authority over the project. Valley Water will request written responses from agencies with jurisdiction over the project within 3 business days.

11.2.4 Work Activities Not Requiring Notification

Some routine maintenance activities such as those with very low impacts, those which are ecologically beneficial, and those which require immediate action, do not require notification. The following activities will not be subject to notification requirements:

1. Pruning, including in-channel (below ordinary high water mark [OHWM]) pruning for flow conveyance; pruning of overhanging or obstructive growth to provide access to Valley Water flood control facilities; pruning to protect structural integrity of facilities; pruning for fire safety or other public safety reasons; pruning of native vegetation/trees for restoration site maintenance; any other pruning of vegetation that is expected to result in the removal of less than 0.01 acre (436 square feet [sq ft]) of riparian vegetation per project; and corrective pruning for ecological health.

2. Coppicing for fire resilience and to improve ecological health.

3. Grazing for fire resilience.

4. Herbicide spraying on maintenance roads and revegetation sites, including areas adjacent to upper maintenance roads and 2 feet below the top of bank hinge, or areas greater than 2 feet below the hinge and separated by a wide area (at least 40 feet) where the herbicide will not drift or flow into the creek. Areas below the hinge that have a concrete or earth bank but are close to the channel (i.e., width [not slope distance] less than 40 feet) would require notification.

5. Removal of dead/dying, diseased, or hazardous vegetation/trees for public safety and ecological health.

6. Removal of leaning trees that direct flows into streambanks and cause erosion; removal of vegetation (less than 6 inches diameter at breast height [dbh]) that could damage concrete wing walls, appurtenances, levees, flood walls, and other facilities or cause erosion, to protect the structural integrity of facilities; removal of vegetation including any vegetation <6” dbh and trees 6-12” dbh in situations where those trees are unlikely to be able to reach healthy maturity due to their location or other circumstances, which are growing between narrowly spaced fences where the vegetation is damaging the fences or is likely to damage the fences before it can be addressed in the next NPW cycle

7. Mowing, unless it is a new site in sensitive habitats, such as wetlands or woody riparian vegetation, or there are potential impacts to special-status species.

8. Minor maintenance activities that will affect less than 0.01 acre (436 sq ft) of wetland or riparian vegetation per work site and do not

dewater a creek reach. In-kind replacements that modify the original design will be reported in the NPW for approval.

9. Minor maintenance activities with riparian/wetland impacts between 436 sq ft and 3,485 sq ft will be reported in the ASR. These minor maintenance activities typically include grading to improve drainage and reduce erosion, stream gauge maintenance, minor erosion repair above OHWM, trash and debris removal, trash boom installation and maintenance, removal of obstructions, passive flood barrier maintenance, flood wall maintenance, maintenance activities at maintenance yards, fish ladder/fish screen maintenance, and restoration site maintenance (below top of bank).

10. Invasive plant removal activities unless the biologist reviewing the invasive plan management action identified a concern as described under Chapter 4.4. Under the SMP, invasive plant removal activities to maintain facilities are considered impact neutral and will not be conducted for mitigation credit. This work category will be reported in the ASR.

11. Management of animal conflicts not described in Table 11-1, including non-lethal trapping .

12. Vegetation management which is done for the purpose of restoration site maintenance (See Chapter 4.2.6).

11.2.5 Carry-over Projects

Carry-over projects are work items that were previously approved by authorizing agencies but were either not performed or only partially completed in a given year. While these instances typically involve bank stabilization and sediment removal activities, this could apply to any activity. Upon initial agency approval, a project may be carried over for up to one additional year without further approval. Project lengths for carry-over projects cannot be increased by more than 50 feet. No new significant vegetation impacts can occur beyond what was originally notified. Harder bank stabilization methods will need agency approval as the impacts incurred may be more severe than the impacts previously approved.

Carry-over projects will be identified in the NPW, stating any differences in estimated vegetation impact, project length, and/or bank stabilization method. The original work item number will be included for tracking clarity. The regular ASR submittal process will be followed for these projects.

11.3 PROJECT IMPLEMENTATION

Once Valley Water receives a Notice to Proceed from the relevant authorizing agencies, regulated maintenance activities may be initiated. All maintenance work will take place during the appropriate work windows. All maintenance activities will be conducted in accordance with the project description, SMP-3 Manual and BMPs, and terms of the maintenance permits. This includes conducting any necessary pre-activity surveys for fish, wildlife, and other

resources if activities may affect these resources. On-site staff who are overseeing and guiding all maintenance activities will receive appropriate training on implementation of SMP-3 BMPs before maintenance activities begin and will ensure that the proper BMPs are employed.

As described in Chapter 3, *Maintenance Planning and Impact Avoidance,* some vegetation management activities that do not involve ground disturbance may take place year-round (e.g., select vegetation removal and pruning activities, mowing) as long as work occurs outside the wetted channel and no work occurs within 24 hours prior to and following a significant rainfall. As previously described, herbicide application may occur at various times of the year depending on plant phenology and is timed to be most effective.

Data will be collected at the project site before, during, and immediately after project implementation, as required by regulatory permits, or according to the protocols described in this SMP Manual. Data collected may include information such as presence and acreage of wetlands within the project area; photographs of site conditions before, during, and after project implementation; quantification of material removed (for sediment removal projects) or placed (for bank stabilization projects); the length and area of vegetation maintenance activities (e.g., herbicide application, removal of vegetation less than 6 inches dbh); and the location or occurrence of any sensitive species or other resources encountered at the site during pre-activity surveys or project implementation.

11.4 ANNUAL SUMMARY REPORT

At the conclusion of the maintenance season, Valley Water prepares and submits the ASR to the regulatory agencies by January 31 of the year following the maintenance work. Annual mitigation monitoring reports may be submitted separately or as an attachment to the ASR. The ASR will comply with the permitting requirements issued by the relevant regulatory agencies and will typically include the following information:

- Description of maintenance activities that were completed the previous year.
- Statement of whether activities were conducted according to the project description and, if not, how the actual project varied from the project description.
- Actual impact numbers (e.g., linear footage/acreage) for activities where such numbers were only estimated in the NPW.
- Site photographs taken before and after project implementation.
- A list of what projects were proposed in the NPW but not performed, including a brief explanation of why and whether these projects will be incorporated into the next year's work plan or placed on a watch list.
- Cumulative summary of SMP impacts to date.
- Cumulative summary of compensatory mitigation activities to date, including the information stated below by work activity.
- A table showing the total balance of tree removals and replacement tree installations in each watershed, along with the balance of oak and sycamore removal and replacement in each watershed. Some mitigation strategies (such as payment of VHP fees) may not incur a requirement to install trees. In these cases, those trees will be noted in the ASR table but will not be part of the balance calculations.
- Description of whether any special-status species or other sensitive resources were encountered during construction and, if so, what impact avoidance steps were taken in response.
- Any lessons learned from that year's activities, including treatments that were not effective, administrative difficulties, and proposed steps to facilitate an improved process.

The ASR will also include status reporting on SMP-3 mitigation activities, including the submittal of follow-up mitigation monitoring reports. Attachment J shows the draft ASR template that will be used. Similar to the NPW, regulatory agencies would be able to review contents of the ASR through the SMP's cloud-based database.

11.5 MITIGATION MONITORING REPORTING

Mitigation monitoring reports will describe monitoring results at mitigation sites identified in the ASRs, as specified in Chapter 10, *Mitigation Program*. Valley Water will provide reports until mitigation success criteria have been achieved, a Notice of Mitigation Completion has been submitted to the agencies, and the agencies have confirmed that mitigation is complete. After approval of the Notice of Mitigation Completion by the applicable regulatory agencies, submittal of annual mitigation monitoring reports is no longer required.

Since the mitigation projects mitigate for impacts on a program-side level, they may compensate for impacts associated with multiple projects covered by the SMP. For example, - if the area restored exceeds the required mitigation amount, the excess mitigation can be applied (as appropriate) to mitigation needs associated with another project. More information on mitigation monitoring reporting is included in the ASR template in Attachment J.

11.6 FISH LADDER/FISH SCREEN INVENTORY

Valley Water inspects fish ladder and fish screen facilities two times per year following the Fish Ladder Inspection Form template (Attachment H). Inspections will determine if sediment, debris, or algal growth are impairing the functionality of the facility. Inspections will also determine if any components of the facility are loose, broken, or missing or present sharp edges. For fish screens, inspections will determine if screens are firmly attached and no gaps, tears, rips, or holes are present. The inspection reports will also identify any other condition that is or could be in the future compromising the functionality of the fish ladder or screen.

An initial inspection is generally performed in the spring and the inspection results are included in the NPW. A follow-up inspection of each facility will be performed between September 1 and October 31 to confirm the completion of any maintenance and repairs. If no repairs or maintenance were performed, the follow-up inspection will confirm whether the condition of the facility remains as reported in the previous inspection report. The results of the follow-up inspections will be reported in the ASR.

11.6.1 Anadromous Salmonid Compensatory Mitigation Sites

The plans for each mitigation site that compensates for SMP-3 impacts to salmonid species will describe any monitoring requirements for that site. Monitoring reports for salmonid mitigation sites will typically be submitted as part of the ASR.

11.7 DATA MANAGEMENT

Valley Water will electronically store SMP project information, including project notification packages, annual monitoring reports, and agency correspondence, over the entire period of SMP-3 (i.e., at least the 10-year period of 2027-2036). This stored information will be accessible and can be viewed through a cloud-based database to track SMP-3 projects and mitigation. It will identify SMP-3 project locations and dimensions, providing historical information that will facilitate cumulative impact analyses throughout the life of the Program.

Stored SMP project information will help ensure that both project impacts and enhancement of habitat and other aquatic resource functions in the SMP-3 coverage area are well documented. Data storage will also demonstrate that SMP work has been adequately monitored to achieve the Program goal of no net loss of aquatic and other ecological resource functions.

SMP project information will be provided in a format accessible to all regulatory agency staff. Annual reporting formats will include a combination of narratives, tables, spreadsheets, and figures to meet individual agency reporting requirements and facilitate review and understanding of SMP projects. Valley Water will provide the data described in Section 11.7.2 below to the regulatory agencies to facilitate its use in the database.

Verification of receipt of reports submitted to the agencies will be provided via electronic signature of the file opening.

The NPW and ASR submittal processes will be evaluated after the first two years of SMP-3. If submitted NPW and ASR information is not necessary for regulatory review or use, or agency staff are not reviewing, using, or applying submitted information, the need to include such information in these reports will be discussed and negotiated with the authorizing agencies for potential modification of submittal requirements.

11.7.1 Current NPW/ASR Nomenclature

Work is proposed to the agencies in the NPW with actual work accomplishments being reported in the ASR. With the creation of a new database, a nomenclature was designed to identify work activities and apply the permit requirements to them. This approach enables readers to quickly identify the core purpose of the work activity without the need to look at the full report.

SMP-3 work activities can be organized according to Notice of Proposed Work (NPW), Annual Summary Report (ASR), or Monitoring (MON). Each work “item” is uniquely identified by calendar year, work activity type, and consecutive number per year. “Item” numbers will be presented as <YY>-<B><C>-<###>, where<YY>, year, represents the year, <B>, basin, is S for the Santa Clara basin and P is for the Pajaro Basin; <C>, category, is the SMP-3 category (see table below); and <###> is a sequential number. For example, 27-SS-001 is the first sediment removal item in the Santa Clara basin created in the database for the year 2027. 31PA-010 is the 10th Animal Conflict item in Pajaro Basin created in the database for the year 2031.

Each SMP-3 item must have only one work activity and only one location.

Category Letter	Category Name
B	Bank Stabilization
A	Management of Animal Conflicts
M	Minor Maintenance
S	Sediment Removal
V	Vegetation Management

This description has been added to assist agency staff in reading the NPWs and ASRs. Future database needs may alter this nomenclature.

11.7.2 Data Parameters

- Project identification number
- Year
- Creek name
- Station from
- Station to
- Size of project area
- Type of mitigation paid, if any
- Related mitigation project identification number
    - Year installed
    - Creek name
    - Station from
    - Station to
    - Size of project area
- Anadromous
- Other listed species habitat

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ATTACHMENT A

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. Stream Maintenance Program operations often pose situations that warrant standard measures to avoid or minimize impacts to water quality. The following best management practices represent measures currently used by the SMP; however, since many of these pollution prevention 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.

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 Windows	**Ground-Disturbing Activities** All ground-disturbing maintenance activities will take place between June 15 and October 15 unless an extension is granted. These activities are summarized in Table 3-1 of the SMP Manual. No new instream sediment removal projects or bank protection work will be initiated after October 15. Requests for work window extensions must be submitted to the regulatory agencies by October 1, 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. Beyond October 15, with regulatory agency approval, work may continue if no significant rainfall (defined for the sake of all BMPs as 0.5 inch or greater within a 24-hour period within the subject watershed) is either forecasted1 or observed. Following October 15, work shall cease for the season if significant rainfall is forecasted or observed. For vegetation removal that involves ground disturbance, work may continue until December 31 or until significant rainfall. Starting

[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
		September 1, 72-hour weather forecasts will be monitored daily, and sites must be maintained so that they can be rapidly winterized2 (implement control measures BMP GEN-25). Work Extensions for Vegetation Removal, Post-Project Restoration, Tree Removal, and Certain Minor Maintenance Activities Involving Ground Disturbance 1. Salmonid Streams: Work may continue until December 31, or until significant rainfall is forecasted or occurs. 2. Other Streams: a. No work shall occur within 24 hours prior to and following significant rainfall (forecasted or observed). b. Work in streams may continue until December 31, or until significant rainfall (forecasted or observed). There are no restrictions on work within dry streams. New ground-disturbing minor maintenance activities that consist of grading, rocking, recompacting, and resurfacing maintenance roads or installing and maintaining trash booms that are initiated after October 15 must be completed in five days or less. Work Extensions for Sediment Removal (including minor maintenance sediment removal) Limits on the duration of extended in-channel work windows for sediment removal activities are as follows: 1. Salmonid Streams: For creeks supporting anadromous fish, the work window may be extended through October 31 (or until significant rainfall is forecasted or observed) if the sediment removal project will be at least 50% complete by October 15. 2. Other Streams: For creeks not supporting anadromous fish (with the exception of reaches listed under #3 below), the work window may be extended through November 30, or until significant rainfall is forecasted or occurs, whichever occurs first. 3. Extended Work Window Reaches: For 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

[2] Winterization is the process of maintaining work sites and preparing work sites for rainfall with the appropriate BMPs to prevent erosion and sediment transport and protect water quality. Winterization occurs upon completion of work activities or, on incomplete projects, prior to the occurrence of forecasted rainfall with at least 25% chance of 0.10 inch in 24 hours.

BMP Number	BMP Title	BMP Description
		(35+00-105+00), and San Tomas Aquino Creek (80+00-100+00), which are hereby defined as Extended Work Window Reaches, the work window may be extended through December 31 with the following conditions: o Site conditions are dry, and access for all construction equipment and vehicles will not impact waterways. o All work will stop if any rainfall is forecast for the next 72-hour period. o Work may occur after a significant rainfall event, but no later than December 31. <u>Work Extensions for Bank Stabilization and Management of Animal Conflicts (with ground disturbance)</u> Bank stabilization and management of animal conflicts with ground disturbance projects may continue until the approved dates specified below. Prior to a forecasted significant rainfall event, all incomplete bank stabilization projects must be winterized. 1. Salmonid Streams: In creeks supporting anadromous fish, the work window may be extended until October 31 (or until significant rainfall is forecasted or observed) if the bank stabilization/ animal conflict project will be at least 50% complete by October 15. 2. <u>Other Streams</u>: In creeks not supporting anadromous fish: o The work window may be extended until November 30 (or until significant rainfall is forecasted or observed) if the bank stabilization/ animal conflict project will be at least 50% complete by October 15<u>. Certain new projects that will be completed in 5 days or less may not be 50% complete by October 15.</u> ~~and for new bank stabilization projects that will be completed in five (5) days or less.~~ **Activities That Do Not Result in Ground Disturbance** Work in this category may include vegetation removal and pruning, mowing, management of animal conflicts, and minor maintenance activities that do not result in ground disturbance. These activities are summarized in Table 3-1. Instream activities within the wetted portion of the channel may occur year-round in all streams (including salmonid streams), except when wheeled or tracked equipment needs to access the site by crossing a creek, ponded area, or secondary channel. No work shall occur within 24 hours prior to or following significant rainfall. Work within streams that support anadromous fish outside of the June 15 through October 15 work window must adhere to the following conditions: • Applicable pre-activity surveys and biological monitoring must be performed (BMP GEN-6,

BMP Number	BMP Title	BMP Description
		through GEN-19, as applicable). • Modification and removal of instream large woody debris will occur as described in the NMFS Biological Opinion. • When work occurs in the wetted channel, within seven days before the start of work, a qualified biologist will survey for sensitive fish species, especially steelhead and redds, within the work area. • A qualified biologist must be on-site to monitor work that occurs in the wetted channel. The biologist will notify crews of the locations of any redds and ensure that direct impacts on redds and sensitive fish species (especially steelhead) are avoided during work activities. As needed, the monitor will advise work crews regarding how to minimize impacts on sensitive fish species and their habitat (e.g., minimizing the footprint of the work area and access routes).
GEN-2	Instream Herbicide Application	<u>All Streams</u> Instream (below ordinary high water) herbicide applications will take place between June 15 and October 15. The work window may be extended until either December 31 or until significant rainfall is forecasted or observed. In addition, herbicide application requirements are as follows: • Herbicides shall not be applied directly to water. • Valley Water shall not apply herbicide when wind speeds exceed 10 miles per hour. Valley Water will use herbicides with the following active ingredients as part of the SMP-3: aminopyralid, aminopyrali + triclopyr, aminopyralid + florpyrauxifen-benzyl, clopyralid, dithiopyr, ethyl oleate, glyphosate, imazamox, imazapyr, isoxaben, paraffinic oil, triclopyr, and triclopyr-choline. As described in Chapter 4.3.7, Valley Water may in some cases substitute other materials as they become available. Any new materials incorporated into SMP-3 herbicide application will be subject to any relevant injunctions. <u>2014 Salmonid Injunction</u> None of these ingredients are subject to the August 15, 2014, injunction for salmonids, which includes restrictions related to protecting streams mapped as critical habitat for Central and South-Central California Coast steelhead. Thus, the restrictions described in this injunction do not apply to Valley Water herbicide use under the SMP-3. <u>2010 Bay Area Listed Species Injunction</u> Valley Water will not be using chemicals subject to this injunction.

BMP Number	BMP Title	BMP Description
		2006 California Red-Legged Frog Injunction Seven of these active ingredients are subject to the October 20, 2006, injunction that applies to the California red-legged frog: aminopyralid + triclopyr, glyphosate, imazapyr, triclopyr, and triclopyr-choline. The following restrictions apply to the use of herbicides with these active ingredients within (1) designated critical habitat for the California red-legged frog and (2) additional California red-legged frog habitat areas shown on Figure A-1. • Herbicides with these active ingredients may not be used within 60 feet (for ground use) or 200 feet (for aerial use) from the edge of aquatic breeding, aquatic nonbreeding, or upland habitat. • Exceptions to these restrictions are as follows: o For the state-designated invasive species3,4 and noxious weeds, with the following conditions: ▪ The herbicide is not applied within 15 feet of aquatic breeding or non-breeding habitat. ▪ Application is limited to localized spot treatment using hand-held devices. ▪ Precipitation is not occurring or forecast to occur within 24 hours. ▪ The herbicide is applied by a certified applicator or an individual working under the direct supervision of a certified applicator. o For herbicides applied for the following uses: ▪ Tree injection applications ▪ Localized spot treatments using handheld devices on rights-of-way, roadsides, pastures, lawns, or in forests are permitted, provided that such use occurs at least 60 feet from the edge of aquatic breeding or nonbreeding habitat. ▪ Individual tree removal using cut stump application is permitted, provided that such use occurs at least 60 feet from the edge of aquatic breeding or nonbreeding habitat.

[3] A list of state-designated invasive species can be found at https://cal-invasives.net/home/species.html.

[4] A list of state-designated noxious weeds can be found at https://www.cdfa.ca.gov/plant/IPC/encycloweedia/winfo_weedratings.html.

BMP Number	BMP Title	BMP Description
		▪ Basal bark application to individual plants, provided that such use occurs at least 60 feet from the edge of aquatic breeding or nonbreeding habitat.
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 of 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 of 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 of 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 on 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

BMP Number	BMP Title	BMP Description
GEN-4	Minimize the Area of Disturbance	To minimize impacts on 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

BMP Number	BMP Title	BMP Description
		Loma Roads.
GEN-6	Protection of Nesting Birds	Nesting Bird Survey Methodology Biological Review of Project: Maps and photographs of the project location will be reviewed by a qualified biologist before a survey is conducted. The survey area will be determined using maps of the projected access, staging, and work areas. A qualified biologist will review the survey area and project details to determine if nesting bird survey can be conducted by a designated individual (DI) in place of a qualified biologist. A qualified biologist may determine a DI can conduct the nesting bird survey prior to pre- and post-emergent herbicide application along maintenance roads or for mowing activities in ruderal areas with minimal nesting substrate (<10% canopy cover) when a nest can be easily detected. If a qualified biologist determines it is appropriate for DIs to conduct the nesting bird survey, the qualified biologist will provide written direction to the vegetation management team allowing for DI survey. DIs will follow the survey protocol outlined in Section 2. For all other projects, a qualified biologist will conduct a nesting bird survey following the protocol outlined below. Survey Location: A qualified biologist shall perform a nesting bird survey throughout the entirety of the work area (including access and staging areas), as well as a 100-foot buffer beyond the designated perimeter of the project area when possible (depending on access and property lines/limits). Suitable nesting habitat within the survey area will be identified to help determine what species may be present and what type of nests could be expected. Survey Timing: Seasonal timing: Nesting bird season begins January 15 and ends September 1. Some of the local bird species in Santa Clara County are known to nest outside of the established nesting season (ex: Anna's hummingbirds begin nesting in late December some years); precautionary nesting bird surveys may be conducted year-round by Valley Water qualified biologists to account for birds that nest out of season. Session Timing: A qualified biologist will conduct a nesting bird survey during daylight hours, beginning at dawn. Surveys will not be conducted in instances of excessive or abnormal cold, heat, wind, rain, or other inclement weather that may interfere with nest detection or reduce bird activity. The biologist will spend a minimum of 5-10 minutes of quiet observation at the beginning of each survey to assess bird activity level before slowly walking through the survey area in search of nests and nesting behavior. The amount of time spent for each survey will vary based on size of survey area, habitat and density of vegetation present, type of

BMP Number	BMP Title	BMP Description
		work to be conducted, time of year, etc. Survey Techniques: A qualified biologist will quietly observe the project area at the beginning of each survey to assess bird activity level. The qualified biologist will then walk slowly through the survey area, using passive visual and auditory observation to detect all bird nests in and around the survey area. If nests cannot be identified, but a nest is suspected due to observed bird behavior or aural cues, the qualified biologist will flag the area and create an ample buffer for any suspected or potential nests. Circumstances such as terrain, vegetation, season, likely species present, built environment, presence of human activity, and activity for which the survey is occurring can be factors in determining the most effective strategy of surveying for nesting birds. Qualified biologists use professional judgement based on expertise, experience, and site knowledge to determine appropriate walking patterns and other details of survey strategy. The area that the qualified biologist surveys in any survey will be limited to an area where work is estimated to be completed within seven days. In some cases, one qualified biologist will conduct the survey. In other cases, multiple biologists will conduct the survey, where it is either determined that multiple biologists would be more effective or when working alone is unsafe due to situations such as encampments or criminal activity. Number of Surveys: One nesting bird survey will be conducted within 7 days prior to the start of work. A second or follow-up survey may be conducted on a separate day in the case of high bird activity, decreased bird activity/detection due to unfavorable survey conditions (such as a change in weather, noise disturbance, or time of day), and/or in any case whereby the qualified biologist cannot confidently identify all bird nests in the project area. Qualified biologist will provide justification for number of bird surveys performed for each work order and documentation of justification will be provided to CDFW. If a lapse in project-related work of 7 days or longer occurs, another survey will be conducted before project work can be reinitiated. Delaying Work: Activities that post an elevated risk of impacting nesting birds will be conducted outside of the local peak of nesting bird season (as determined by a qualified biologist). Qualified biologist will delay vegetation removal work if 3 or more nests are detected in the work area, if the biologist cannot confidently survey the entire work area due to dense vegetation, and/or if there is high nesting bird activity and all suspected nests cannot be confidently identified and buffered within the project area.

BMP Number	BMP Title	BMP Description
		In the case of work being delayed for 3 or more nests having been detected in the work area, a qualified biologist may recheck nests at a later date. When the qualified biologist confirms that all nests in the work area that were detected during the initial survey are no longer active (the nest has failed or the chicks are fledged), the entire work area may be resurveyed by a qualified biologist. If the qualified biologist detects two or less nests during the resurvey, the nests will be buffered, and work will proceed outside of the buffered areas. Flagging and Buffering Nests: If an active nest (i.e., a nest with eggs or young) is found or suspected, a buffer will be established and maintained until the young have fledged. Standard buffer widths are 0.5 mile for bald and golden eagles; 250 feet for other raptors, least Bell's vireo, herons, and egrets; 50 feet for ground-nesting non-raptors; 700 feet for California Ridgway's rail or California black rail; 600 feet for California least tern and western snowy plover; and 50 feet for non-raptors nesting in trees, in shrubs, and on structures. A qualified biologist may identify an alternative buffer (larger or smaller) for individual nests on a case-by-case basis based on site-specific consideration of the species, the nature of the work, the height of the nest, intervening vegetation or topography buffering the nest from the work, pre-existing human activity to which the birds are already habituated, and other factors. The boundary of each buffer zone will be marked with flagging. The buffer zone will be maintained until the nest is no longer active, as determined by a qualified biologist. Data Management: Qualified biologists will document all observed and suspected nests in a shared geospatial database. Qualified biologists will record location of nest, date of survey, work order number, surveyor name, nesting bird species, photos, and any relevant notes. Nest map and nest details will be immediately available to all biologists and field crews. Designated Individual (DI) Training and Survey Protocol DI Training Program: Valley Water maintenance workers and contractors will complete a yearly mandatory classroom training on survey methodology, nest identification, and nest buffer protocol before nesting bird season begins. The classroom training will include survey demonstrations by Valley Water biologists, an overview of common nests found in Santa Clara County, nesting bird behavior, and a detailed overview on how to flag and buffer nests. Valley Water staff will also be required to complete a practical biannual (every other year) field training on DI survey protocols, nest identification, and binocular use. All field trainings will be led by Valley Water wildlife biologists during the nesting season (January 15 to September 1) and will emphasize quality over speed of surveys. DIs will be provided with a DI Handbook that outlines DI survey

BMP Number	BMP Title	BMP Description
		protocol and pictures and descriptions of common nests found in Santa Clara County. Supplemental field training will be provided throughout the nesting bird season by Valley Water wildlife biologists. Throughout the season, qualified biologists will meet DIs in the field to observe DI surveys and provide suggestions and adjustments as needed. DI Survey Protocol Pre- and Post-Emergent Herbicide Activities: DIs will conduct a passive observational and auditory survey of the daily work area during daylight hours, beginning at dawn, in appropriate meteorological conditions, to identify any birds exhibiting potential nesting behavior. The observation of the work area and surroundings will take place over enough time to detect nesting birds. The survey time will vary based on the size and characteristics of each site but a minimum of one hour per one acre of potential nesting substrate will be spent on the survey. If nesting behavior is observed, DIs will identify, flag, and buffer the nest area. If nests cannot be identified, but a nest is suspected due to observed bird behavior or aural cues, the DI will flag the area and create an ample buffer for any suspected or potential nests. Mowing Activities: The enhanced DI survey protocol for mowing activities will involve two surveys led by trained DIs and will require DIs to walk ahead of mowing crews. These methods are outlined in greater detail below. The first survey will be a passive observational and auditory survey of the daily work area to identify any birds exhibiting potential nesting behavior. The observation of the work area and surroundings will take place over enough time to detect nesting birds. The survey time will vary based on the size and characteristics of each site but a minimum of one hour per one acre of potential nesting substrate will be spent on the survey. If nesting behavior is observed, DIs will identify, flag, and buffer the nest area. If nests cannot be identified, but a nest is suspected due to observed bird behavior or aural ques, the DI will flag the area and create an ample buffer for any suspected or potential nests. After the passive observational and auditory survey, a stick or rope drag survey will be conducted prior to mowing work in the daily work area. The DIs will walk through the project area using stick or rope drag methods to disturb the grass while avoiding contact with the ground. Rope drag surveys will be conducted using a lightweight rope held by two individuals walking at the same pace through the survey area. Another trained DI equipped with binoculars will stand 70 feet behind the stick or rope and monitor for any potential activity that reveals nesting birds. If a bird is flushed, the DI will stop the survey, wait for bird to return to nest, and flag and buffer nest area. If the DI does not observe the bird return to the nest, no work will occur in the area. Finally, DIs will walk ahead of active mowing crews to watch for flushing birds. If a bird is flushed, the DI

BMP Number	BMP Title	BMP Description
		will stop work and wait for the bird to return to the nest, and flag and buffer nest area. If the DI does not observe the bird returning to the nest, no work will occur in the area. Flagging and Buffering Nests: Standard buffer widths are 0.5 mile for bald and golden eagles; 250 feet for other raptors, least Bell's vireo, herons, and egrets; 50 feet for ground-nesting non-raptors; 700 feet for California Ridgway's rail or California black rail; 600 feet for California least tern and western snowy plover; and 50 feet for non-raptors nesting in trees, in shrubs, and on structures. The boundary of each buffer zone will be marked with flagging. The buffer zone will be maintained until the nest is no longer active, as determined by a qualified biologist. Data Management: Senior Maintenance Workers will document the time spent conducting DI surveys in the daily Maximo log. DIs will document area surveyed, time spent conducting survey, and all observed and suspected nests in the DI Field Survey Data Sheet. All nests recorded in the DI Field Survey Data Sheet will be automatically included in the biological resources map and nest information will be immediately available to biologists and field crews. Qualified biologists will review DI survey logs and identified nests throughout nesting bird season. Nest Disturbance: In any case of a nest disturbance or take of nesting birds, a CDFW representative will be notified within 24 hours. In cases where a nest has been disturbed but left in place, a qualified biologist will check on the nest later that day and/or the following day to determine the state of the nest. After the nesting bird incident, Valley Water will investigate the nesting bird incident and prepare a full report of the incident. This full report will be submitted to CDFW within 90 days, though Valley Water will strive to submit the report within 30 days.
GEN-6.1	Protection of Alameda Song Sparrow and San Francisco Common Yellowthroat	Pre-activity surveys for the Alameda song sparrow and San Francisco common yellowthroat will occur using the general procedures described in BMP GEN-6. Individual song sparrows will be determined to potentially be Alameda song sparrows if they occur within the range indicated in Figure A-2 (shown at the end of this attachment). This subspecies typically occurs in tidal salt marsh and brackish marsh, though it also occurs in nontidal salt marsh having sufficiently dense/tall vegetation; it could potentially occur in reaches of mixed brackish/fresh marsh; and it also occurs in dense vegetation at upland/wetland edges adjacent to any of the wetland types described above. Individual common yellowthroats will be determined to potentially be San Francisco common yellowthroats if they occur within the range indicated in Figure A-2 of the SMP Manual, regardless of the habitat type in which they are found. If a pre-activity survey occurs within the range of the San Francisco common yellowthroat and/or Alameda

BMP Number	BMP Title	BMP Description
		song sparrow (see Figure A-2) during their nesting season (defined as February 25–August 15), one of the following survey methods will be used to ensure the protection of active nests of these species: 1. If the biologist identifies more singing male song sparrows and/or common yellowthroats than active nests, inconspicuous nests of these species may have been missed. In this case, maintenance activities in the area will be delayed until after the nesting season. 2. If individuals of these species are found during pre-activity surveys and Valley Water wishes to perform breeding-season work near occupied habitat, the biologist will map the territories of common yellowthroats and song sparrows during the pre-activity survey by observing the movements and behaviors of individuals. Nesting within this mapped area will be assumed, and territories will be buffered by 50 feet.
GEN-6.2	Protection of Nesting Least Bell's Vireos	**Areas with Greatest Potential for Nesting Least Bell's Vireos** To the extent feasible, SMP activities occurring in areas with the greatest potential to support nesting least Bell's vireos (Pacheco Creek, the Pajaro River, and reaches of Uvas/Carnadero Creek and Llagas Creek downstream from Highway 152) shall be scheduled to occur outside of the least Bell's vireo nesting season (March 15 through July 31). If it is not feasible for maintenance activities along these reaches to be scheduled during the non-nesting season, the measures listed under Pre-Activity Surveys below will be implemented. <u>Pre-Activity Surveys</u> For maintenance activities that will result in minimal noise, do not require heavy equipment (with the exception of a mower operated outside the riparian corridor), are limited in duration (60 minutes or less), and require no more than 3 personnel, pre-activity surveys will be performed within the work area and a surrounding buffer of 100 feet. For all other maintenance activities, pre-activity surveys will be performed within the work area and a surrounding buffer of 250 feet. <u>Pre-activity surveys will be performed as follows:</u> 1. Work will be preceded by a focused survey for at least Bell's vireos within two calendar days before the initiation of maintenance activities. The survey will be conducted between dawn and 11:00 a.m., during mild weather conditions (i.e., not during excessive cold, heat, wind, or rain), and within all riparian habitat in and within 250 feet of any proposed maintenance location along these reaches, as applicable. The survey will be conducted by a qualified biologist who is familiar with the visual and auditory identification of this species. The biologist should not survey more than 3 linear kilometers or 50 hectares of habitat on any given survey day. The numbers and

BMP Number	BMP Title	BMP Description
		locations of brown-headed cowbirds detected within vireo territories will be recorded. 2. To avoid last-minute changes in the work schedule if an active nest is found, a preliminary survey may be performed more than 2 calendar days prior to the start of maintenance activities. 3. To minimize impacts on 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 for and listen to 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, carrying food, or repeatedly visiting a certain area. 4. If one or more least Bell's vireo nests are detected, the measures listed under Protection of Active Nests below will be implemented. <u>Protection of Active Nests</u> 1. If an active nest is found, a minimum 250-foot no-activity buffer will be established around the nest; for low-impact activities described above, a 100-foot buffer is appropriate if a qualified biologist monitors the birds during the activity and determines that the birds are not disturbed by the activity (if disturbance is observed, the buffer will be increased until the birds show no signs of disturbance). 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 exist 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 distances for these activities on a case-by-case basis. 2. 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. 3. If a least Bell's vireo and/or its nest are detected during pre-activity surveys, Valley Water will contact the USFWS and CDFW within two working days regarding the presence and location of the bird/nest. **Other Areas with Riparian Habitat within the Pajaro River Watershed** In other areas that provide potential least Bell's vireo habitat within the Pajaro River watershed, outside of the areas described above as having the greatest potential to support this species, pre-activity surveys will be conducted concurrently with surveys for other nesting birds following the procedures described in

BMP Number	BMP Title	BMP Description
		BMP GEN-6.
GEN-7	Protection of Burrowing Owls	For VHP covered activities, Valley Water will follow the appropriate condition from the VHP. Otherwise, the following protocol will be used. Pre-Activity Surveys During the nesting season (defined as February 1 to August 31), pre-activity surveys for burrowing owls will be performed as part of the nesting bird survey described in BMP GEN-6. During the nonbreeding season, a qualified biologist will conduct a desk audit to determine if high-quality habitat for burrowing owls (i.e., burrows of California ground squirrels and adjacent open grassland areas) is present within the work area. If (1) suitable habitat is present within the work area and (2) maintenance activities would potentially cause suitable burrows for this species to be crushed or blocked, a pre-activity survey will be performed within 7 days of the start of work activities. Regardless of the time of year, if a burrow with signs of burrowing owl presence (e.g., whitewash, pellets, and/or feathers) is observed during the pre-activity survey but no burrowing owl is present, a second survey will be performed within 24 hours prior to the start of work to determine whether burrowing owls are present. The survey shall occur between morning civil twilight and 10:00 a.m., or between two hours before sunset and evening civil twilight, to provide the highest detection probability. If no burrowing owls are found during the pre-activity surveys, the work may proceed. If burrowing owls are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals below will be implemented.* Protection of Individuals 1. If occupied burrows are identified, a 250-foot radius no-work buffer zone will be established around the burrow. No maintenance activities will occur within the 250-foot buffer zone during the nesting season (defined as February 1 to August 31). However, the buffer may be reduced with CDFW approval to take into consideration paved roads, intervening riparian corridors, levees, the nature of the work, and other factors that might indicate a reduced buffer would be adequate. 2. 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

BMP Number	BMP Title	BMP Description
		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. If work is not covered by the VHP, Valley Water will consult with CDFW prior to any excavation of burrows. e. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active. 5. Exceptions: a. Routine Use of Levee Roads: Routine use of existing Valley Water maintenance roads within the 250-foot buffer will be allowed year-round. However, no traffic involving loud/heavy equipment associated with sediment removal or bank stabilization will be allowed to use the maintenance road in a burrowing owl buffer during the active nesting period. b. Mowing: Mowing on levees may occur within 250 feet of active burrows year-round with the following conditions: i. A qualified biologist will monitor mowing within the buffer zone. ii. Active burrows will be marked by a qualified biologist. Markers shall be placed immediately prior to mowing and removed immediately following mowing, to avoid alerting predators to burrow locations. iii. No vehicle-mounted mowers will be used within 10 feet of occupied burrows. Areas within 10 feet of occupied burrows may be mown quickly using hand equipment (e.g., string trimmers) when no owls are visible on the surface. iv. All mowing activities within the buffer zone will be completed within 30 minutes.
GEN-8	Avoid and/or Minimize 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 CDFW protocols and the CNPS Botanical Survey Guidelines to formulate the following protocols: 1. A qualified botanist will use Valley Water's GIS database, the CNDDB, Santa Clara Valley Habitat Plan (VHP) data, and/or other suitable tools to identify potential locations of special-status plants and sensitive natural vegetation communities within or near work areas. 2. All activities within serpentine areas will be avoided, including herbicide application. 3. Within non-serpentine areas, protocol-level surveys within areas identified as sensitive natural

BMP Number	BMP Title	BMP Description
		communities or suitable habitat for special-status plant species will be conducted by a qualified botanist within 1 year prior to commencement of work. If these surveys detect an occurrence of special-status plants, this occurrence will be submitted to CNDDB. 4. Surveys will be conducted during the appropriate time of the year (i.e., the target species' blooming period) to adequately identify special-status plants that could occur on or immediately adjacent to the site of proposed maintenance activities. 5. For all maintenance activities, impacts to sensitive natural communities and special-status plants identified by the qualified botanist will be avoided and/or minimized. The qualified botanist will recommend one or more of the following measures, as appropriate, to avoid and/or minimize impacts: a. Flag or otherwise delineate in the field the special-status plant populations and/or sensitive natural community to be protected. b. Maintain an adequate no-disturbance buffer around plants or habitat. The location of the buffer will be shown on the maintenance design drawings and marked in the field with stakes and/or flagging in such a way that the buffer is 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 to occur during periods of the year when the plant species is dormant and/or in a non-critical life cycle period. This is more appropriate for annual plants rather than perennials. d. Store removed sediment off site. e. Limit the operation of maintenance equipment to established roads whenever possible. 6. If any individual special-status plants are impacted, regardless of the extent of the impact, Valley Water will collect and bank seed with an accredited institution to facilitate potential future restoration opportunities and conserve the population's genetic diversity. 7. For vegetation management activities: a. 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. b. If special-status plant species or sensitive communities are present, the qualified botanist will determine if a given type of vegetation management method is ecologically appropriate for a given area. Alternative strategies based on the botanist's recommendations will be

BMP Number	BMP Title	BMP Description
		coordinated with appropriate staff.
GEN-9	Protection of Monarch Butterflies	1. A qualified botanist or Designated Individual will use Valley Water's GIS database and/or other suitable tools to identify milkweed within or near work areas. The database of milkweed locations will be updated on an ongoing basis based on the observed distribution of milkweed in Program work areas. 2. If milkweed is present, a qualified botanist will determine if a given type of vegetation management method is ecologically appropriate for a given area. Alternative strategies based on the botanist's recommendations will be coordinated with appropriate staff. 3. To the extent feasible, maintenance activities along stream reaches supporting known concentrations of milkweeds will occur between September 1 and March 15, when monarch eggs and larvae are absent. 4. If work occurs within areas supporting milkweed concentrations between March 15 and October 31, a qualified biologist or Designated Individual will conduct a pre-activity survey for milkweed prior to the start of work activities. a. The maintenance activity will maintain an adequate no-disturbance buffer around milkweed plants. The location of the buffer will be marked in the field with stakes and/or flagging in such a way that the buffer is visible to maintenance personnel without excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing). b. No herbicides, terrestrial or aquatic, will be used in areas where milkweed concentrations are present. Anticipating the potential need for milkweed seed for mitigation projects in the future, Valley Water staff would also collect milkweed seed in association with their SMP mowing. Seed collection would be done with as minimal disturbance to the plant as practicable.
GEN-10	Protection of Crotch's Bumble Bees	<u>VHP-covered activities will comply with applicable VHP conditions to protect Crotch's bumble bee.</u> For non-VHP-covered activities, Valley Water will follow the procedures in the Final SMP Crotch's Bumble Bee Avoidance Plan (Valley Water 2024) to avoid and minimize impacts on the species. The measures in the Plan are as follows, described in greater detail in the Plan: • Annually train field staff and designated individuals (DIs) prior to the construction season how to identify insects such as bumble bees, how to recognize bumble bee nesting behavior, how to avoid impacts to individual bumble bees, and when to contact a qualified biologist for additional investigation of bumble bee occurrences or potential nests. • Have a qualified biologist assess habitat suitability to determine if the activity occurs in an area

BMP Number	BMP Title	BMP Description
		providing suitable habitat for foraging or nesting CBB, and if so, identify areas providing suitable habitat to inform surveys. • Have a qualified biologist conduct surveys to determine whether foraging CBB and/or CBB nests are present. • If a CBB nest is present in the work area, implement a no-disturbance buffer around the nest and provide a biological monitor until it is determined the buffer is sufficient to protect the nest. If CBB are present in the work area, provide a biological monitor until CBB are no longer present. • If no CBB nests or adults are present, no further surveys need to be done for the remainder of the flight season. However, depending on the project activities, a qualified biologist may need to be onsite to prescribe additional surveys and/or monitoring to meet the requirements of the avoidance and minimization measures for CBB.
GEN-11	Avoidance and Protection of Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail	1. For maintenance activities occurring within the range of the salt marsh harvest mouse (SMHM), California Ridgway's rail (CRR), or California black rail (CBR), as defined in Valley Water's GIS layers, a qualified biologist will conduct a desk audit to determine whether potentially suitable habitat for one or more of these species may be present within, adjacent to (defined as within 50 feet for SMHM, 50 feet for CRR and CBR outside the nesting season, and 700 feet for CRR and CBR during the nesting season) of the maintenance activity area, including both work locations and access routes. The nesting season for CRR and CBR is defined as February 1 to August 31. 2. All SMP activities within 700 feet of occupied or potentially occupied CRR or CBR nesting habitat, as determined by a qualified biologist, shall be avoided during the nesting season, with the following exception: a. CRR are assumed to be nesting within 700 feet of the Palo Alto Flood Basin tide gate, albeit on the outboard side of the levees (e.g., on Hooks Isle or in the Palo Alto Estuary) rather than in the Palo Alto Flood Control Basin, and SMHM may be present in vegetation near the tide gate. If a blockage at the Palo Alto Flood Basin tide gate occurs, trash and debris removal may be performed under the following conditions: i. Trash and debris removal shall occur at the Palo Alto Flood Basin tide gate in January prior to the nesting season of each year to minimize the potential of a blockage accumulating during the nesting season. ii. Blockages will only be cleared during the nesting season in response to an immediate and urgent issue (rather than as part of regular maintenance activities). It is expected that blockages will only need to be cleared once or twice during the SMP-3 period. If blockages require clearing more frequently, this exception will be revisited in consultation

BMP Number	BMP Title	BMP Description
		with the CDFW and USFWS. In cases where tide gate blockages need to be cleared in response to an immediate and urgent issue during the nesting season, Valley Water will notify CDFW within 24 hours following the work. iii. A qualified biologist familiar with the identification and biology of the CRR and SMHM will monitor the removal of trash and debris from the tide gate. The biologist will perform the following duties: 1. Provide recommendations to minimize noise and visual disturbances to CRR nesting in nearby areas, especially for activities on the downstream side of the tide gate, and to avoid impacts on SMHM. 2. Ensure that activities are limited to the minimum necessary to clear the blockage sufficiently for the remainder nesting season, and no more than 2 hours in duration. 3. Stop work if a SMHM is observed in, or a CRR is observed within 50 feet ofthe work area. 3. Within seven days prior to work within or adjacent to suitable habitat, a qualified biologist will survey the work area, access routes, and immediately adjacent areas (defined as areas within 50 feet) to identify suitable habitat areas for SMHM, CRR, and CBR. Specific habitat areas are defined as tidal habitat with vegetated areas of cordgrass, marsh gumplant, pickleweed, alkali heath, bulrush, and other marsh vegetation; brackish marsh reaches of creeks with heavy accumulations of bulrush thatch (old stands); and high-water refugial habitat that may include annual grasses and shrubs immediately adjacent to the marsh vegetation described above. If rails are observed during this survey, a qualified biologist will conduct an additional survey immediately prior to initiation of SMP activities. A no-disturbance buffer (minimum of 50 feet) will be implemented. 4. Activities located within or immediately adjacent to (i.e., within 50 feet of) suitable 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 individuals from reaching available cover or flush them from high-water refugia. 5. Within the identified suitable habitat areas, vegetation will be removed by hand from areas to be directly impacted by the work activities if possible (hand removal of vegetation in some channels may not be possible). Within the mapped range of these species but outside of areas identified as suitable habitat, other methods (e.g., mechanized hand tools or mowing) may be possible. Mowing using heavy equipment (tractors, boom mowers, and rider mowers) will not be conducted in habitat areas or within 50 feet of habitat areas.

BMP Number	BMP Title	BMP Description
		6. If suitable habitat occurs within or adjacent to (defined as within 50 feet of) the work area, a qualified biologist will conduct a pre-activity survey of all suitable habitat that may be directly or indirectly impacted by the day's activities (work area, access routes, staging areas). This survey will be conducted prior to the initiation of work each day for all vegetation management activities including ground or vegetation disturbance, operation of large equipment, grading, sediment removal, and bank stabilization work. a. If during the initial daily survey or during work activities, a CRR or CBR is observed within or immediately adjacent to the work area (defined as within 50 feet), work will be suspended until the individual leaves the area on its own. b. If, during the initial daily survey or during work activities, a SMHM, or an animal that could potentially be a SMHM, is observed within or immediately adjacent to the work area (defined as within 50 feet), initiation of work will be delayed until a plan can be developed and implemented by a qualified biologist to protect the rodent. 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 USFWS with a suggested course of action and seek concurrence. 7. If work is necessary within 50 feet of suitable habitat areas, the qualified biologist will remain on-site to monitor the work. 8. If dense herbaceous vegetation (e.g., fennel with dense bases) or dense woody vegetation (e.g., coyote brush) will be removed, it may be difficult for the qualified biologist to detect individual SMHM, or nests of this species, before the vegetation is removed. To ensure that any individuals or nests of this species are detected, the following procedures will be followed: a. A qualified biologist will search the vegetation for SMHM and their nests. If they are able to adequately survey the entire plant, then a chainsaw or other mechanized equipment may be used to remove the vegetation. If the biologist is not able to adequately survey vegetation to be removed due to the presence of dense vegetation, they will initially search as much of this vegetation as feasible (e.g., the upper, less dense portions). b. At the direction of the biologist, the maintenance crew will use either mechanized or non-mechanized hand tools to remove the portion of the vegetation that the biologist was able to search adequately (e.g., the outer branches or upper portion of the plant) under close supervision. Mechanized hand tools may be appropriate for large woody vegetation or tall herbaceous vegetation (such as weeds on levees), and non-mechanized hand tools may be

BMP Number	BMP Title	BMP Description
		appropriate for dense herbaceous marsh vegetation (such as pickleweed). c. Once the outer/upper portions of the vegetation have been removed, the biologist will then re-survey the remaining vegetation. d. This process (a–c) will be repeated iteratively until the biologist is able to search all vegetation thoroughly and the vegetation has been removed. 9. See ANI-2 for restrictions on pesticide use near SMHM, CRR, and CBR habitat. 10. If visual observation cannot confirm that a SMHM, CRR, or CBR has 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 CDFW and USFWS have been contacted for guidance. 11. When grazing occurs in or near SMHM habitat, a qualified biologist will guide fence installation to exclude grazing animals from SMHM-specific habitat. Once exclusion fencing has been installed, a biologist does not need to be on site to monitor grazing.
BMP GEN-12	Protection of California Red-Legged Frogs and California Tiger Salamanders	A qualified biologist will conduct a desk audit to determine whether suitable habitat for California red-legged frogs (CRLF) and/or California tiger salamanders (CTS) is present in or adjacent to a maintenance activity based on all available information, including the habitats modeled in the VHP. If the qualified biologist determines that one or both of these species are likely to be encountered within the work area, the pre-activity surveys described below will be performed. <u>Pre-Activity Surveys (for Activities Not Covered Under the VHP)</u> 1. A qualified biologist will conduct a single daytime survey within a 7-day period preceding the onset of maintenance activities. 2. If the qualified biologist conducting the desktop audit determines a high likelihood that CRLF and/or CTS may be encountered during the work, an additional nighttime survey will also be conducted. 3. If an individual CRLF and/or CTS is observed within the work area during either the daytime or nighttime pre-activity survey, the following additional surveys will be conducted: a. For activities that will not result in ground disturbance and for vegetation removal activities that will take less than 1 day, a qualified biologist will conduct a single pre-activity survey prior to the start of work on the first day that work occurs. b. For maintenance activities that involve ground disturbance and vegetation removal activities that will take more than one day, the qualified biologist shall conduct a pre-activity survey on

BMP Number	BMP Title	BMP Description
		each morning of and prior to the scheduled work commencing. If no CRLF or CTS are found during the pre-activity surveys, the work may proceed. If CRLF or CTS of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under Protection of Individuals below will be implemented. <u>Pre-Activity Survey (for VHP-Covered Activities)</u> This survey is not required by the VHP but may be implemented by Valley Water on a voluntary basis. 1. A qualified biologist will conduct a single daytime survey within a seven-day period preceding the onset of maintenance activities. If the qualified biologist deems it appropriate based on their professional judgement, a night survey for CRLF and/or CTS may also be conducted within a seven-day period preceding the onset of maintenance activities. If no CRLF or CTS are found during the pre-activity survey, the work may proceed. If CTS of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under Protection of Individuals below will be implemented. <u>Protection of Individuals (All Activities)</u> These protection measures are not required under the VHP but may be implemented by Valley Water on a voluntary basis for VHP-covered projects. These measures are required for projects that are not covered under the VHP. If CRLF or CTS eggs or larvae are found, a buffer will be established by a qualified biologist around the location of the eggs/larvae and work may proceed outside of the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed, and species have moved out of the area. If CRLF or CTS adults or non-larval juveniles are found, one of the following two procedures will be implemented: 1. 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 approval for the CRLF or both USFWS and CDFW approval for the CTS), and work may proceed. 2. 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. Work within the buffer zone will be

BMP Number	BMP Title	BMP Description
		rescheduled. During animal conflict management activities, if CRLF or CTS 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 the subterranean networks of the occupied burrow or produce substrate vibrations that 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 CRLF or CTS 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 impact area, with USFWS approval for the CRLF or USFWS and CDFW approval for the CTS. A biologist will observe the relocated animal until it is certain that the animal is not in immediate danger of desiccation or predation. <u>Site-Specific Species Protection (for Activities Not Covered Under the VHP)</u> For Sediment Removal and Bank Stabilization Projects that are not covered under the VHP, if CRLF or CTS of any life stage are found, the qualified biologist, in cooperation with the project proponent, shall complete a site-specific plan to protect individuals for the project. Elements of the plan may 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 individuals, methods of documentation, and reporting of results.
BMP GEN-13	Protection of Foothill Yellow-Legged Frogs	A qualified biologist will conduct a desk audit to determine whether suitable habitat for foothill yellow-legged frogs (FYLF) is present in or adjacent to a maintenance activity based on all available information, including the habitats modeled in the VHP. If the qualified biologist determines that this species is likely to be encountered within the work area, the pre-activity surveys described below will be performed. Pre-Activity Surveys (for Activities Not Covered Under the VHP) 1. A qualified biologist will conduct a single daytime survey within a seven-day period preceding the onset of maintenance activities. 2. If an individual FYLF is observed within the work area during the daytime pre-activity survey, the following additional surveys are required: a. For activities that will not result in ground disturbance and for vegetation removal activities that will take less than one day, a qualified biologist will conduct a single pre-activity survey prior to the start of work on the first day that work occurs.

BMP Number	BMP Title	BMP Description
		b. For maintenance activities that involve ground disturbance, and vegetation removal activities that will take more than 1 day, the qualified biologist shall conduct a pre-activity survey on each morning of and prior to the scheduled work commencing. If no FYLF are found during the pre-activity surveys, the work may proceed. If FYLF of any life stage are detected during the surveys and/or during the course of maintenance activities, the qualified biologist may elect to implement additional pre-activity surveys prior to start of work as described and may implement the measures listed under Protection of Individuals below. Pre-Activity Survey (for VHP-Covered Activities) This survey is not required under the VHP but may be implemented by Valley Water on a voluntary basis. 1. A qualified biologist will conduct a single daytime survey within a 7-day period preceding the onset of maintenance activities. If no FYLF are found during the pre-activity surveys, the work may proceed. If FYLF of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under Protection of Individuals below will be implemented. <u>Protection of Individuals (All Activities)</u> These protection measures are not required under the VHP but may be implemented by Valley Water on a voluntary basis for VHP-covered projects. These measures are required for projects that are not covered under the VHP. If FYLF eggs or larvae are found, a buffer will be established by a qualified biologist around the location of the eggs/larvae and work may proceed outside of the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed, and species has moved out of the area If FYLF adults or non-larval juveniles are found, one of the following two procedures will be implemented: 1. 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 CDFW approval), and work may proceed. 2. 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. Work within the buffer zone will be

BMP Number	BMP Title	BMP Description
		rescheduled. Site Specific Species Protection (for Activities Not Covered Under the VHP) For Sediment Removal and Bank Stabilization Projects not covered under the VHP, if FYLF of any life stage are found, the qualified biologist in cooperation with the project proponent shall complete a site-specific plan to protect individuals for the project. Elements of the plan may 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 individuals, methods of documentation, and reporting of results.
BMP GEN-14	Protection of Northwestern Pond Turtles	A qualified biologist will conduct a desk audit to determine whether suitable habitat for northwestern pond turtles (NWPT) is present in or adjacent to a maintenance activity based on all available information, including the habitats modeled in the VHP. If the qualified biologist determines that this species is likely to be encountered within the work area, the pre-activity surveys described below will be performed. Pre-Activity Surveys (for Activities Not Covered Under the VHP) 1. A qualified biologist will conduct a single daytime survey within a 7-day period preceding the onset of maintenance activities for NWPT and nests of this species. 2. If an individual NWPT is observed within the work area during the daytime pre-activity survey, the following additional surveys are required: a. For activities that will not result in ground disturbance and for vegetation removal activities that will take less than 1 day, a qualified biologist will conduct a single pre-activity survey prior to the start of work on the first day that work occurs. b. For maintenance activities that involve ground disturbance and vegetation removal activities that will take more than 1 day, the qualified biologist shall conduct a pre-activity survey on each morning of and prior to the scheduled work commencing. If no NWPT are found during the pre-activity surveys, the work may proceed. If NWPT of any life stage are detected during the surveys and/or during the course of maintenance activities, the measures listed under Protection of Individuals below will be implemented. Pre-Activity Survey (for VHP-Covered Activities) This survey is not required under the VHP but may be implemented by Valley Water on a voluntary basis. 1. A qualified biologist will conduct a single daytime survey within a seven-day period preceding the onset of maintenance activities for NWPT and nests of this species. If no NWPT are found during the pre-activity surveys, the work may proceed. If NWPT of any life stage

BMP Number	BMP Title	BMP Description
		are detected during the surveys and/or during the course of maintenance activities, the measures listed under *Protection of Individuals* below will be implemented. Protection of Individuals (All Activities) These protection measures are not required under the VHP but may be implemented by Valley Water on a voluntary basis for VHP-covered projects. These measures are required for projects that are not covered under the VHP. If an active NWPT nest is detected within the activity area, a 50-foot buffer zone will be established and maintained around the nest during the breeding and nesting seasons (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. If NWPT adults or juveniles are found, one of the following two procedures will be implemented: 1. 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 CDFW approval), and work may proceed. The individual will be relocated to a suitable site within the same watershed and within 500 meters of its original location unless it is first tested and determined to be free of shell-wasting disease. 2. 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. A qualified biologist or biological monitor will monitor the individual(s) and modify the buffer if needed. Work within the buffer zone will be rescheduled. Site Specific Species Protection (for Activities Not Covered Under the VHP) For Sediment Removal and Bank Stabilization Projects, if NWPT of any life stage are found, the qualified biologist in cooperation with the project proponent shall complete a site-specific plan to protect individuals for the project. Elements of the plan may 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 individuals, methods of documentation, and reporting of results.
BMP GEN-15	Prevention of Spread or Mobilization of Pathogens and Invasive Plants	To minimize the potential for introduction or spread of amphibian and NWPT pathogens, the following measures (or other similar measures) will be implemented during qualified biologists' work in aquatic habitats potentially supporting special-status amphibians and/or NWPT: • Sampling and field gear will be disinfected after exiting one aquatic habitat and before entering

BMP Number	BMP Title	BMP Description
		the next aquatic habitat, unless the waters are hydrologically connected to one another. • All organic matter will be removed from nets, traps, boots, vehicle tires, and all other surfaces that have come into contact with water or potentially contaminated sediments. These items will then be rinsed with clean water before entering the next aquatic habitat, unless the waters are hydrologically connected to one another. • Boots, nets, traps, hands, etc., will be scrubbed with a bleach solution (0.5 to 1.0 cup per 1.0 gallon of water), Quat-128™ (1:60), or a 3 to 6 percent sodium hypochlorite solution and thoroughly rinsed clean with water between study sites. Equipment will be rinsed clean with water between study sites. Cleaning equipment in the immediate vicinity of aquatic habitats will be avoided (e.g., clean in an area at least 100 feet from aquatic features). Care will be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat. Ifthe waters are hydrologically connected to one another, disinfecting equipment does not need to occur between habitats. • When working at sites with known or suspected disease problems, disposable gloves will be worn and changed between handling each animal. Gloves will be wetted with water from the site or distilled water prior to handling any amphibians. Gloves will be removed by turning inside out with hands cleaned using a hand cleaner and water rinse to minimize cross-contamination. • If an individual of any amphibian species, or a NWPT, is found and appears to be infected by a pathogen, it will not be moved off-site. Rather, the USFWS and CDFW will be contacted for guidance on the disposition of the individual. • If amphibians or NWPT need to be relocated to avoid injury or mortality of individuals, they will be relocated the minimum distance necessary to move them to suitable habitat outside the maintenance area. Relocations will follow processes described in species-specific BMPs. NWPT will be relocated only within the same watershed and within 500 meters of their original location, unless they are first tested and determined to be free of shell-wasting disease. To minimize the potential for introduction and spread of Phytophthora during revegetation work: • Container stock used at revegetation sites will be sourced from nurseries in compliance with the Guidelines to Minimize Phytophthora Pathogens in Restoration Nurseries (Working Group for Phytophthoras in Native Habitats, 2016) whenever feasible. Valley Water may adopt newer guidelines as they become available. To minimize the potential for introduction or spread of Phytophthora and invasive plants to sensitive plant communities, the following measures (or other similar measures) will be implemented for any SMP activities occurring immediately adjacent to (especially upslope from) serpentine plant communities:

BMP Number	BMP Title	BMP Description
		• Before arrival at the site, equipment, vehicles, and tools will be free of soil, including debris on tires, wheel wells, vehicle undercarriages, and other surfaces. A high-pressure washer and/or compressed air may be used (at an off-site location) to ensure that soil and debris are completely removed. Vehicles that travel and park only on paved public roads and that do not carry mud, soil, gravel, or plant material from off-site locations do not require external cleaning. The interior of vehicles and equipment (e.g., cabs) must be free of mud, soil, gravel, and other debris (e.g., vacuumed, swept, or washed). • Prior to arrival at the site, small tools and equipment must be washed to be free of soil or other contamination, and they must be sanitized. Wood handles on tools should be sealed with a waterproof coating to make them easier to sanitize. Before sanitizing, all soil and organic material (roots, sap, etc.) will be removed from the surface. If necessary, a detergent solution and brush will be used to scrub off surface contaminants. A sanitizing agent may also be used as a cleaning fluid. Screwdrivers or similar implements may be needed to clean soil out of crevices or shoe treads. Brushes and other implements used to help remove soil will be cleaned and sanitized after use. • Sanitization procedures will occur after surface soil and debris are removed. Surfaces will be treated with a sanitizing agent, allowing the appropriate contact time before use or rinsing. If surfaces are clean and dry, they will be thoroughly wetted and allowed to rest for the appropriate contact time. If the sanitizer has been used to help clean the surface, fresh sanitizer should be used to rinse off any dirty solution, and again, the equipment should be allowed to rest for the required contact time. If treated surfaces are wetted with water, the sanitizing solution may become diluted; enough sanitizer should be applied to completely displace the water film. Sanitizing agents may be applied by using spray bottles and thoroughly wetting the surface. All appropriate safety precautions will be observed to prevent contact with eyes or skin when using these agents. • Sanitizing agents may include 70 to 90 percent ethyl or isopropyl alcohol (sprayed to thoroughly wet the surface and allowed to air dry before use); freshly diluted bleach solution (0.525 percent sodium hypochlorite) for a minimum of 1 minute (due to corrosivity, not advised for steel or other materials damaged by bleach); or 2,000 parts per million (ppm) quaternary ammonium disinfectant for 1 minute (or according to manufacturer recommendations for use against Phytophthora), freshly made to ensure target concentrations. • Footwear must be free of debris and soil before arriving at the site and should be cleaned and disinfected before starting work each day. At the start of work at each new job site, workers' clothes should be free of all mud, soil, or plant debris. If clothes are not freshly laundered, remove all debris and adhered soil with a stiff brush.

BMP Number	BMP Title	BMP Description
		• Soil and plant debris will be cleaned from equipment and hand tools, buckets, and gloves. • To the degree feasible, work activities in or immediately adjacent to (especially upslope from) serpentine communities should be scheduled to avoid rainy periods or times when soil is very wet and more likely to contaminate equipment. • Materials used for erosion control will be clean, new, sanitized, or otherwise have a low risk of Phytophthora contamination. Erosion control methods will be implemented in a manner that directs surface water flow away from sensitive plant species and communities. • Mulch, compost, soil amendments, and other revegetation materials must be determined to be low-risk for Phytophthora introduction, if used. Irrigation system components (e.g., pipe, fittings, valves, driplines, and emitters), erosion control fabric, fencing, stakes, posts, and other planting site materials must be new or sanitized.
GEN-16	Protection of Bats and Bat Colonies	1. A qualified biologist will conduct a desk audit to determine whether suitable habitat (appropriate roost trees or anthropogenic structures) is present for bats and/or bat colonies within 100 feet of the work site, staging areas, or access routes. 2. If potential bat and/or bat colony habitat is determined to be present, a qualified biologist will conduct a survey within two weeks prior to the onset of work activities to look for evidence of 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 and/or bat colony is found in a tree or structure that must be removed or physically disturbed, the qualified biologist will consult with the CDFW prior to initiating any removal or exclusion activities.
GEN-17	Protection of San Francisco Dusky-footed Woodrat	Prior to work within riparian, oak woodland, or coyote brush scrub habitats or the removal of any oak trees outside these habitats, a qualified biologist will conduct a desk audit to determine whether woodrats are known to be present within or adjacent to the work location or if a suitable habitat is present.

BMP Number	BMP Title	BMP Description
		1. If the biologist determines that woodrats are known to be present at the work location or suitable habitat is present and the presence/absence of woodrats is unknown AND the maintenance activity would result in the disturbance of suitable habitat or woodrat nests (if present), a pre-activity survey for this species will be performed. 2. If no woodrat habitat is present, or if there is habitat present but it will not be affected by the maintenance activity, then no further action is required. Pre-Activity Survey If required, a qualified biologist shall conduct a pre-activity survey within 2 weeks prior to the start of maintenance activities to determine if woodrat nests are present within the immediate activity area or a surrounding 5-foot buffer. If no woodrat nests are found during the pre-activity survey, the work may proceed. If woodrat nests are detected during the survey and/or during the course of maintenance activities, the measures listed under Protection of Individuals below will be implemented. <u>Protection of Individuals</u> If woodrat nests are determined to be present, the following measures will be implemented: 1. To the extent feasible, impacts on woodrat nests will be avoided by maintaining a minimum 5-foot buffer between maintenance activities and nests. Even if a 5-foot buffer cannot be maintained, Valley Water will minimize impacts to nests by avoiding the direct destruction or modification of the nests to the extent feasible. 2. 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. CDFW will be notified before any relocation activities and relocations will follow the plan described below. a. 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. b. 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 on which the woodrats can add nest material. Alternatively, a suitable artificial nest box may be used. c. Subsequently, during the evening hours (i.e., within two hours prior to sunset), a qualified

BMP Number	BMP Title	BMP Description
		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; relocation efforts will then proceed a minimum of two weeks later (following a survey by a qualified biologist that determines that dependent young are no longer present), or CDFW will be contacted for guidance on how to proceed.
GEN-18	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 following: 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 including the targeted salvage of Pacific lamprey ammocetes following methods outlined in the Lamprey Technical Workgroup (2020) Appendix C, shall be captured in the work area and transferred to another reach as determined by a qualified biologist. 2. Timing of work in streams that support a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. 3. 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. 4. Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work. Streams that support a sensitive species (i.e., steelhead, Pacific lamprey) will require a relocation effort and/ or initial onsite monitoring by a qualified biologist, depending on seasonal conditions.
GEN-19	Avoidance of Impacts on the San Joaquin Kit Fox	A qualified biologist will conduct a desk audit to determine whether a maintenance activity will occur in an area where the San Joaquin kit fox could potentially occur (based on VHP habitat mapping and CNDDB records) and in potential habitat for the species. If the biologist determines that the maintenance activity could occur in an area where San Joaquin kit foxes are potentially present, a pre-activity survey for this species will be performed as described below. <u>Pre-Activity Surveys</u> If the biologist determines that an SMP activity could occur in an area that could potentially support a kit fox, Valley Water 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:

BMP Number	BMP Title	BMP Description
		a. Conduct a 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, evaluate their use by kit fox, and, if possible, assess the potential impacts on the kit fox of 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 and CDFW shall be immediately notified. Disturbance or destruction to all San Joaquin kit fox dens should be avoided. Destruction or disturbance of any known or natal/pupping kit fox den would require authorization from the USFWS and CDFW. 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: USFWS and CDFW must be contacted (occupied and unoccupied) ▪ Atypical den: 50 feet If take of the San Joaquin kit fox will occur, take authorization from the USFWS and CDFW will be necessary.
GEN-20	Hazard Tree Removal	The following requirements apply to hazard tree removal activities occurring under the SMP: • No soil disturbance, aside from superficial disturbance of the ground surface (such as when a tree is dragged), will occur during hazard tree remediation activities. • If tree removal activities not covered under the VHP result in the removal of more than five adjacent trees, each 12-inch diameter at breast height or larger, or a stand of trees with a canopy area equal to or larger than 2,000 square feet, Valley Water will revegetate the affected area with some native woody vegetation components. These native trees and/or shrubs will be selected by a qualified biologist and/or vegetation management professional to determine suitability for the local site and will be planted to best encourage re-establishment of native woody riparian vegetation in the larger canopy gap. • No tree known to have been occupied (based on CNDDB records, other available information, or a pre-activity survey) by an active Swainson's hawk, bald eagle, or golden eagle nest within the

BMP Number	BMP Title	BMP Description
		prior five years would be removed under the Program.

General Maintenance Practices

BMP Number	BMP Title	BMP Description
GEN-21	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-22	Employee/Contractor Training	All appropriate Valley Water staff and contractors will receive annual training on SMP BMPs. The training will also include an overview of special-status species identification and habitat requirements. Valley Water staff and contractors will receive fact sheets to assist with in-the-field identification of special-status species and their habitats. For Valley Water staff and contractors who may be working in streams which are habitat for sensitive salmonid species, this training will include a salmonid education awareness training which will emphasize methods to cross a stream and work in water that avoid or minimize impacts to water quality and salmonid habitat. These methods are presented in a salmonid BMP pamphlet distributed to all field crews at the time of the annual training. This pamphlet includes a list of steelhead creeks in the county, a diagram of the best areas to cross creek channels, and methods to avoid or minimize impacts to salmonid habitat.
GEN-23	Paperwork Required On--Site	1. Copies of regulatory permits related to the SMP will be kept on-site and available for review if requested by regulatory personnel. All Valley Water staff will be familiar with the requirements outlined in the SMP permits. 2. Copies of the SMP Manual and this BMP Manual will be kept on-site.
GEN-24	Work Site Housekeeping	1. Valley Water 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 BMP GEN-25). 4. Valley Water's maintenance crews are responsible for properly removing and disposing of all

BMP Number	BMP Title	BMP Description
		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, and cigarettes) will be collected at the site daily and disposed of at an appropriate disposal site.
GEN-25	Erosion and Sediment Control Measures	1. Erosion control measures will be implemented so that the site is stabilized and water quality is protected prior to significant rainfall. The channel bed and areas below the Ordinary High-Water Mark (OHWM) are exempt from this BMP. 2. Erosion control fabrics will consist of natural fibers where feasible; 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 and following the California Stormwater Quality Association (CASQA) Construction Stormwater Best Management Practice Handbook guidelines. 4. Erosion control measures may include, but are not limited to silt fences, straw bale barriers, brush or rock filters, storm drain inlet protection, temporary sediment traps, temporary sediment basins, erosion control blankets and mats, soil stabilization (i.e., tackified straw with seed, jute or geotextile blankets, etc.), wood chips, and straw mulch. Geotextile fabric will only be used when biodegradable materials (e.g., straw matting, erosion control blankets) are determined to be ineffective or infeasible. 5. Where necessary to minimize soil from being tracked onto streets near work sites, construction entrances and exits will be stabilized. 6. All temporary construction-related erosion control methods will be removed at the completion of the project. 7. At no time will oily, greasy, or sediment-laden runoff be allowed to enter or be placed where it may later enter any waterway. Any active non-stormwater discharge will cease immediately. Corrective actions will be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. If more than 10 business days are required for compliance, a rationale will be recorded. 8. All necessary and adequate precautions will be taken to prevent the project from increasing the turbidity of any watercourse flowing past the construction site. Where natural turbidity is between 0 and 50 NTU, waters will be free of changes in turbidity that cause nuisance or adversely affect

BMP Number	BMP Title	BMP Description
		beneficial uses. Where natural turbidity is greater than 50 NTU, increases will not exceed 10 percent. 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 work area. Active non-stormwater discharges and visual increases in turbidity must be immediately reported to Valley Water's SMP Implementation Project Manager. 9. 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. Modifications, repairs, and improvements to erosion control measures will be made as needed to protect water quality. 10. Starting September 1, 72-hour weather forecasts will be monitored daily and sites must be maintained so that they can be rapidly winterized. Winterization is the process of maintaining work sites and preparing them for rainfall with the appropriate BMPs to prevent erosion and sediment transport and protect water quality. Winterization occurs upon completion of work activities or, on incomplete projects, prior to the occurrence of forecasted rainfall of at least 25% chance of 0.10 inch in 24 hours.
GEN-26	Staging and Stockpiling of Materials	1. To protect on-site vegetation and water quality, staging areas will be located on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation and be located outside of sensitive habitats. 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 waterbodies or storm drains. 3. 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. Any odorous materials will not be stockpiled longer than seven calendar days on site. 4. Runoff from the staging areas will not be allowed to enter waterways, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens). 5. The discharge of decant water into waterways from any on-site temporary sediment stockpile or storage area is prohibited. 6. Wet material removed from an isolated creek reach may be pulled to the side of the channel

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		(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. 7. During the wet season (generally October 1 through April 30), no stockpiled soils or other materials will remain exposed, unless surrounded by properly installed and maintained (i.e., per manufacturer specifications) silt fencing or other means of erosion control that prevents runoff from the stockpile into waters of the state. During the dry season, exposed, dry stockpiles will be watered, enclosed, covered. (BMP GEN-25). 8. All pipes, culverts, or similar structures stored at a site within sensitive species areas, for one or more overnight periods will 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 Valley Water biologist will be consulted on what steps should be taken to protect the species. If a Valley Water biologist is on-site, they may remove the special status species from the pipes and relocate to the nearest appropriate and unaffected habitat.
GEN-27	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 will be blocked with wattles, hay bales, or other appropriate filtration material. Excess water may be drained from the truck by slightly tilting the loads and allowing the water to drain out through the applied filter. However, this may only occur where the sediment is being loaded into the trucks within the active project area in the creek or within an identified vegetated area (swale) that is separated from the creek.
GEN-28	Stream Access	Valley Water 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

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		to the stream bottom. Appropriately-tired vehicles, either tracked or wheeled, will be used depending on the site and maintenance activity.
GEN-29	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 as hazardous materials and hazardous waste in accordance with city, state, and federal regulations. Any hazardous waste will be properly recycled or disposed of off-site. 3. Hazardous materials and wastes will be stored in watertight containers and stored in appropriate secondary containment that is capable of containing 110% of the primary container(s). Generators and other equipment with the potential to leak or spill fuels and lubricants will be stored or operated with secondary containment. Rainwater in secondary containment that may have mixed with hazardous waste will be properly disposed of. 4. Hazardous materials and waste will be stored away from waterways to avoid a direct connection to the storm drainage system or surface water. 5. Hazardous materials and waste will be covered when not in use and at the end of every workday, during wet weather, or when rain is forecasted. 6. 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. 7. Sanitation facilities will be regularly cleaned and/or replaced and inspected daily for leaks and spills.
GEN-30	Existing Hazardous Materials	If hazardous materials, such as oil, batteries, or paint cans, are encountered at the maintenance sites, Valley Water will carefully remove and dispose of these materials according to applicable regulatory requirements. Valley Water staff will wear proper protective gear and store the waste in appropriate hazardous waste containers until it can be disposed of at a hazardous waste facility.
GEN-31	Paving and Asphalt Work	1. Avoid paving and seal coating in wet weather or when rain is in the forecast, to prevent materials that have not cured from contacting stormwater runoff. 2. Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal or fog seal; and when saw cutting asphalt or concrete. 3. Collect and recycle, or as appropriate, dispose of excess abrasive gravel or sand. Do not sweep

BMP Number	BMP Title	BMP Description
		this material into gutters. 4. Do not use water to wash down fresh asphalt concrete pavement. 5. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system. 6. Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as work is complete in one location or at the end of the workday. 7. If sawcut slurry enters a catch basin, clean it up immediately.
GEN-32	Painting and Paint Removal	1. Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream. 2. For water-based paints, paint out brushes to the extent possible and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain. 3. For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste. 4. Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash. 5. Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead-based paint removal requires a state-certified contractor.
GEN-33	Spill Prevention and Response	Valley Water will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels, storm drains, or on the ground following these measures: 1. Valley Water field personnel will be appropriately trained in spill prevention, hazardous material control, and cleanup 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. Valley Water staff or contractors will routinely inspect the work site to verify that spill prevention

BMP Number	BMP Title	BMP Description
		and response measures are properly implemented and maintained. 6. Surfaces where fluids have spilled will not be hosed down. Dry cleanup methods (absorbent materials, cat litter, and/or rags) will be used. 7. Spilled dry materials will be swept up immediately. The contractor will not try to wash them away with water or bury them. If water must be used, the contractor will collect the water and spilled fluids and dispose of them as hazardous waste. 8. Spills on dirt areas will be cleaned up by digging up and properly disposing of contaminated materials. 9. Small spills (less than 18 inches in diameter), including small quantities of oil, gasoline, paint, or other materials, should be controlled by the first responder (maintenance staff) and do not necessarily require an emergency response team. Medium spills (greater than 18 inches but less than 6 feet in diameter) are generally controlled by the first responder (maintenance staff), but police or fire department HAZMAT teams may be called based on conditions. If a hazardous materials spill occurs that cannot be contained or cleaned up with the onsite materials or the spill is significant (larger than 6 feet in diameter or is a "running" spill), the onsite Valley Water field personnel will be responsible for immediately initiating an emergency response sequence by notifying the proper authorities (i.e., Valley Water 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; and deferring all other response activities to public emergency response agencies and/or the Valley Water ER Team or Valley Water ER Contractor. Depending on the nature of the release, the Valley Water ER Team's actions will include urgent (responding within two hours of notification) field response site reconnaissance, emergency sequence initiation, defensive containment, release control, incident command, or priority (non-two-hour) field response site reconnaissance and clean-up operations. All significant releases of hazardous materials, including oil, are required by law to be reported. If a "reportable5" spill of petroleum products occurs, Valley Water's SMP Program Manager will be notified, and the appropriate safety and cleanup crews will be contacted. A written description of the reportable

[5]A reportable spill is defined 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.

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		release is required to 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.
GEN-34	Existing Hazardous Sites	Upon selection of maintenance project locations, Valley Water 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 Valley Water'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, Valley Water will contact the RWQCB case manager listed in the database. Valley Water will work with the case manager to ensure maintenance activities do not affect cleanup or monitoring activities or threaten the public or environment.
GEN-35	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. Have appropriate fire suppression equipment available at the work site. b. Keep flammable materials, including flammable vegetation slash, at least 10 feet away from any equipment that could produce a spark, fire, or flame. 3. Do not use portable tools powered by gasoline-fueled internal combustion engines within 25 feet of any flammable materials unless a round-point shovel or fire extinguisher is within immediate reach of the work crew (no more than 25 feet away from the work area).
GEN-36	Dust Management	Valley Water will implement the Bay Area Air District (Air District) Basic Dust Control Measures. Current measures stipulated by the Air District Guidelines include the following: 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site will be covered. 3. All visible mud or dirt track-out onto adjacent public roads will be removed using wet-power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads will be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved will be completed as soon as possible.

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		Building pads will be laid as soon as possible after grading, unless seeding or soil binders are used. 6. Idling times will be minimized either by shutting equipment off when not in use or by 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 will be provided for construction workers at all access points. 7. All construction equipment will be maintained and properly tuned in accordance with manufacturer ‘s specifications. All equipment will be checked by a certified mechanic and determined to be in proper condition prior to operation. 8. Post a publicly visible sign with the telephone number and person to contact at Valley Water regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District‘s phone number will also be visible to ensure compliance with applicable regulations.
GEN-37	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 where feasible. For activities such as sediment removal where equipment must be operated from the stream, dewatering will be conducted as necessary, following the protocols in BMPs GEN-40 or GEN-41. 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, which 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. The designated area will be clearly marked with berms, sandbags, or other barriers. Secondary containment, such as a

BMP Number	BMP Title	BMP Description
		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-38	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 creek channels or 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 waterbodies or to areas outside of the active project site is prohibited. Additional vehicle/equipment washing will occur at the approved wash area in Valley Water's corporation yard.
GEN-39	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. A designated area will be designated for equipment fueling away from any slopes, watercourses, or drainage facilities. When possible, fueling will occur 100 feet away from any waterbody. 4. 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. Other impenetrable barriers may be used such as an earthen berm with a layer of Visqueen to prevent fluids from running off or through the staging area to waters of the U.S./state.

Dewatering

BMP Number	BMP Title	BMP Description
GEN--40	Diversion and/or Dewatering for Non-Tidal Sites	If water is present within the channel during the maintenance work period and work requires that equipment be used in the channel below the OHWM, the streamflow will be diverted around the work area by installing a temporary dam and/or bypass. Where appropriate, stream flow diversions will occur via gravity-driven systems. To avoid and minimize impacts to water quality and aquatic wildlife, the following measures will be

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		implemented: 1. For construction and monitoring of a stream flow bypass, VW's Sediment Removal and Bank Stabilization Projects checklist will be completed. 2. Recommendations by a qualified biologist to protect native fisheries and aquatic vertebrates will be incorporated into the bypass design which may include: a. Screening the stream flow diversion source or pump; b. Relocation of native aquatic vertebrates, including targeted salvage of Pacific lamprey ammocetes following methods outlined in the Lamprey Technical Working Group (2020) Appendix C; c. Where sediment removal activities occur, ensure that a berm is left between the work area and stream flows during excavation activities and that the berm between the work and the channel is wide enough to prevent introduction of turbid water from the cell into the channel; and d. Measures to ensure the diversion system will not result in negative effects to downstream flows (e.g. erosion) during or following diversion system implementation and dismantling. Construction: 1. The construction of diversion and dewatering facilities will be based on the water bypass plan. 2. Cofferdams will be installed both upstream and downstream of the work area to minimize impacts. 3. In streams where water may enter the maintenance site from downstream (reverse flow), additional cofferdams on the downstream end may be necessary. When multiple cofferdams are constructed, the upstream dam will be constructed first. 4. Instream cofferdams will only consist of sandbags6, earthen fill, clean gravel, or rubber bladders. 5. Plastic sheeting will be placed over k-rails, timbers, and earthen fill to minimize water seepage into and out of the maintenance areas. The plastic sheets will be firmly anchored, using sandbags or gravel bags, 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

[6] Clean gravel bags are preferred, but sandbags may be utilized if approved as part of the diversion and dewatering plan.

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		bags may be required to prevent sediment from re-entering the wetted channel. 7. If necessary to prevent erosion, an energy dissipator will be constructed at the discharge point. 8. Timing of flow diversions will be coordinated with the completion of the dam structure to avoid drying up the downstream creek area. 9. For diversion systems implemented on creek reaches supporting sensitive fish species: a. A qualified biologist must be on site during the construction and dismantling of a diversion system on a sensitive fish creek reach; and b. Any proposed changes to the diversion plan must be approved by a qualified biologist before changes are implemented. Implementation: 1. Water flows downstream of the work site will be maintained to prevent stranding aquatic vertebrates, and implementation of channel dewatering in addition to relocation plans will be submitted to the appropriate agencies. a. Native aquatic vertebrates will be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that support 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. 2. Water diverted around work sites and water detained by cofferdams will be protected from maintenance activity-related pollutants, such as soils, equipment lubricants, or fuels. 3. Filtration devices (silt bags attached to the ends 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, Valley Water's SMP Implementation Project Manager will be alerted. 4. 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

BMP Number	BMP Title	BMP Description
		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 that of receiving water. Deconstruction: 1. When maintenance is completed, the flow diversion structure will be removed as soon as possible with a qualified biologist or biological monitor on site. Impounded water will be released at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat. 2. Removal of flow diversion will begin at the downstream end. 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 riparian vegetation.
GEN-41	Diversion and/or Dewatering in Tidal Work Areas	1. For tidal areas, a downstream cofferdam will be constructed to prevent the work area from being inundated by tidal flows. 2. Cofferdams and fish exclusion measures will be installed at low tide when the channel and project site are at their driest. 3. If possible, bypass pipes will not be used when work is being conducted on one side of the channel if flows can continue on the other side of the creek channel without entering the project area. 4. If downstream flows cannot be diverted around the work 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 above the background levels of the tidal waters into which they are discharged. Energy dissipators may be installed at the discharge point to prevent erosion. 5. If upstream flows are present, the entire streamflow will be diverted around the work area. This may occur in work areas straddling non-tidal and tidal reaches. In muted tidal reaches (e.g., systems with a downstream tide gate), timing of flow diversions will be coordinated with the tide gate to maintain water within the downstream creek area and to minimize dry back conditions during low tide. 6. Cofferdams in tidal areas will consist of earthen or gravel material. If earthen material is used, the downstream and upstream faces will be covered by a protected covering (e.g., plastic or fabric) if

BMP Number	BMP Title	BMP Description
		needed to minimize erosion. A protective covering or sheeting will be placed on the water side of an earthen coffer dam to protect water quality. 7. When maintenance is complete, 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. 8. A qualified biologist will be on site during the construction and dismantling of a dewatering system.
GEN-42	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. Generators will be stored or operated with secondary containment. 3. Pumps will be operated and monitored to prevent low water conditions, which could pump muddy bottom water, or high-water conditions, which create ponding. 4. All pump intakes will be screened to prevent entrainment of native fish or amphibian species. The screening dimensions will be appropriate to the species present. Pumps in steelhead creeks will be screened according to NMFS criteria (http://www.swr.noaa.gov/sr/fishscrn.pdf) to prevent entrainment of steelhead. 5. A qualified biologist will be on site during the construction and dismantling of a dewatering system.

Public Safety

GEN-43	Public Outreach	The public will be informed of upcoming maintenance work prior to the start of work as part of the NPW: 1. Neighborhood Work Notices will be distributed as part of the NPW preparation prior to the start of work. 2. Local governments (cities and County) will be notified of scheduled maintenance work. The NPW will be submitted to the public works departments~~,~~ and local fire districts~~,~~ ~~and Valley Water's Flood Protection and Watershed Advisory Committees.~~ 3. Valley Water will post specific information on individual maintenance projects on the SMP website: (https://www.valleywater.org/project-updates/stream-maintenance-program)

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		4. For high-profile projects, at Valley Water'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-44	Implement Public Safety Measures	Valley Water 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, as appropriate, in public-access 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 are temporarily closed. 3. If temporary lane closures are required to allow trucks to pull into and out of access points to the work site, advance signage will be posted. 4. Temporary fencing, either the orange safety type or chain link, will be installed above repair sites on bank stabilization projects. 5. When necessary, Valley Water or contracted staff will provide traffic control and site security.
GEN-45	Minimize Noise Disturbances to Residential Areas	Valley Water will implement maintenance practices that minimize disturbances to residential areas surrounding work sites: 1. With the exception of emergencies, work will generally be conducted during normal working hours (6:30 a.m. to 4:00 p.m.) on weekdays. Vegetation maintenance activities that do not involve heavy equipment may begin at 6:00 a.m. Valley Water may adjust work hours to comply with local noise ordinances. Maintenance activities in residential areas will not occur on Saturdays, Sundays, or Valley Water 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.
GEN-46	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 a.m. – 10:00 a.m. and 3:00 p.m. – 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

BMP Number	BMP Title	BMP Description
		ensure that emergency vehicle access and response is not impeded. 2. Bicycle and pedestrian facilities closures will be scheduled outside of peak traffic hours (7:00 a.m.– 10:00 a.m. and 3:00 p.m. – 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 during the maintenance period. 5. Access to driveways and private roads will be maintained. If brief periods of maintenance would temporarily block access, property owners would be notified prior to maintenance activities.

Cultural Resources

BMP Number	BMP Title	BMP Description
GEN-47	Minimize Impacts to Inadvertently Discovered Cultural Resources	Work in areas where cultural resources are identified will be restricted or stopped until proper protocols are met. 1. Work at the location of the find will halt immediately within 100 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 100 feet in all directions from the find. 2. VW shall retain the services of a an archaeologist, meeting the U.S. Secretary of the Interior’s qualifications in archaeology (Federal Register Vol. 48, No. 190, 1983), who shall visit the discovery site as soon as practicable, and perform minor hand excavation to describe the archaeological resource present and assess the amount of disturbance. 3. The archaeologist shall provide to VW and, if projects are in USACE jurisdiction, the USACEs, at a minimum, written and digital-photographic documentation of all observed cultural materials, utilizing the guidelines for evaluating archaeological resources for the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP). Based on the assessment, VW and USACE shall identify the CEQA and Section 106 cultural resources compliance procedure to be implemented. 4. If the cultural resource appears to not meet the CRHR or NRHP criteria of significance or to be a unique archeological or tribal cultural resource and the USACE archaeologist concurs with the archaeologist’s conclusions, construction shall continue while monitored by the archaeologist.

BMP Number	BMP Title	BMP Description
		The authorized maintenance work shall resume at the discovery site only after VW has retained an archaeologist to monitor and the Watershed Manager has received notification from the USACE to continue work. 5. If the find appears significant (i.e., appears to meet the CEQA definitions of an "historical resource" "unique archaeological resource", or "tribal cultural resource"), avoidance of additional impacts is the preferred alternative. The archaeologist shall determine if adverse impacts to the significant cultural resource can be avoided. 6. When avoidance is not feasible (e.g., maintenance activities cannot be deferred or they must be completed to satisfy the SMP objective), VW shall develop an Action Plan and submit it to the USACE within 48 hours of archaeologist's evaluation of the discovery. The Action Plan may be submitted via e-mail to the archaeologist. The Action Plan shall be prepared in accordance with current professional standards and State guidelines, including CEQA requirements for preparation of a data recovery plan if required, and shall describe the services of a Native American Consultant for sites containing Native American remains.
GEN-48	Discovery of Paleontological Resources	Work in areas where paleontological resources are identified will be restricted or stopped until proper protocols are met. 1. Work at the location of the find will halt immediately within 100 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 100 feet in all directions from the find. 2. VW shall retain the services of a Paleontologist, meeting the Society for Vertebrate Paleontology's criteria for a "qualified professional paleontologist" (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995), who shall visit the discovery site as soon as practicable, and perform minor hand-excavation to describe the paleontological resource present and assess the amount of disturbance. 3. The paleontologist will follow the Society for Vertebrate Paleontology's guidelines for treatment of a paleontological find. 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. VW will be responsible for ensuring that the paleontologist's recommendations are implemented.
GEN-49	Discovery of Human Remains	Work in areas where human remains are identified will be restricted or stopped until proper protocols are met. 1. Work at the location of the find will halt immediately within 100 feet of the find. A "no work" zone shall be established utilizing appropriate flagging to delineate the boundary of this zone, which

BMP Number	BMP Title	BMP Description
		shall measure at least 100 feet in all directions from the find. 2. In the event of discovery of human remains (or if 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. 3. VW shall immediately notify the Santa Clara County Coroner and provide any information that identifies the remains as Native American. If the remains are determined to be Native American, the Coroner shall contact the Native American Heritage 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 48 hours to respond and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods. 4. Preservation in situ is the preferred option. Human remains shall be preserved in situ if continuation of the maintenance work, as determined by the archaeologist and MLD, will not cause further damage to the remains. The remains and artifacts shall be documented, the find location carefully backfilled (with protective geo-fabric if desirable) and recorded in VW project files. 5. Human remains or cultural items exposed during maintenance that cannot be protected from further damage shall be exhumed by the 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-50	Review of Projects with Native Soil	1. An archaeologist will conduct a review and analysis of those project 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 analysis of the potential to disturb cultural resources will be based on an initial review of archival information from the California Historical Resources Information System/Northwest Information Center (CHRIS/NWIC). If necessary, the archaeologist will conduct additional research (including a review of the Sacred Lands Inventory of the Native American Heritage Commission) and a field inventory of the project site to determine the presence/absence of surface cultural materials associated with either pre-contact or historic-era occupation. The results, along with any mitigation and/or management recommendations, would be presented in an appropriate report and include Area of Potential Effects maps showing vertical and horizontal areas of disturbance, other necessary figures, and correspondence with interested parties. A summary table indicating appropriate management (e.g., monitoring during construction, presence/absence testing for subsurface resources, avoidance, data recovery, etc.) will be developed for each project site reviewed. The results report with be submitted to the USACE for Section 106 consultation. 2. If a cultural resource as determined by the archaeologist appears significant (i.e., appears to meet

BMP Number	BMP Title	BMP Description
		the CEQA definitions of an “historical resource” “unique archaeological resource”, or “tribal cultural resource”), avoidance of additional impacts is the preferred alternative. If the resource cannot be avoided, the mitigation and/or management recommendations will be developed consistent with CEQA requirements, including requirements for a data recovery plan if required. 3. If the project location falls under the purview of a tribal monitoring agreement between Valley Water and a tribe, the archaeologist will determine whether the tribal monitoring agreement requires the presence of a tribal monitor at any of the project sites that would involve disturbance/excavation of native soil previously undisturbed by contemporary human activities. If the tribal monitoring agreement requires the presence of a tribal monitor, the archaeologist will arrange for one to be present during all ground disturbing activities.

Utilities

BMP Number	BMP Title	BMP Description
GEN-51	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 NPW. Utilities will be avoided as much as possible. For maintenance areas with the potential for adverse effects on utility services, the following measures will be implemented: 1. Utility excavation or encroachment permits will be required from the appropriate agencies. These permits include measures to minimize utility disruption. Valley Water and its contractors will comply with permit conditions. Such conditions will be included in construction contract specifications. 2. Utility locations will be verified through a field survey (potholing) and use of the Underground Service Alert services. 3. Detailed specifications will 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 will be notified of Valley Water’s maintenance plans and schedule. Arrangements will be made with these entities regarding protection, relocation, or temporary disconnection of services. 4. Residents and businesses in the project area will be notified of planned utility service disruptions two to four days in advance, in accordance with state standards. 5. Disconnected cables and lines will 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 will also be required. 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 to protect water quality. 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 located 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 in these areas, the channel will be graded so that the transition in 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 channels, stream gauges, outfalls, culverts, flap gates, tide gates, grade control structures, bridges, fish ladders, and fish screens shall be characterized in accordance with Valley Water's Sediment Characterization Plans for the SMP-3 (Attachment E). 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 of the Manual 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 VW. BMPs for the following maintenance techniques are included: tree pruning, tree removal, plant removal, woody debris management, herbicide application, mowing, discing, 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 will be bagged and disposed of in a landfill. Arundo canes or invasive Ludwigia 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. If use of such equipment requires dewatering, Valley Water will submit a dewatering plan as part of the NPW process.
VEG-4	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. 3. Grazing animals will be excluded from areas where they may negatively impact sensitive biological resources as directed by the qualified biologist. 4. Grazing animals will be excluded from wetted channels, saturated soils, and wetlands. 5. Grazing will not occur within 24 hours of rain events or when soils are saturated or subject to compaction. 6. Animals will be provided access to off-stream water sources such as troughs or wells. 7. Grazing will be managed to maintain sufficient vegetative cover to prevent erosion. 8. Grazing will be implemented on a rotational basis across designated areas to allow for vegetation recovery and minimize soil compaction.

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 E 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 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 that contour the repaired site to conform to adjacent areas upstream and downstream to prevent potential erosion impacts.
BANK-2	Concrete Use Near Waterways	Fresh concrete will be isolated until it no longer poses a threat to water quality, using the following appropriate measures: 1. Wet-sacked concrete and poured concrete will be excluded from the wetted channel for a period of 30 days after it is installed/poured. During that time, the concrete will be kept moist, and runoff from the concrete will not be allowed to enter a stream. Containment structures will be installed to control the placement of wet concrete and to prevent it from entering the channel outside of those structures. 2. Commercial sealants (e.g., Deep Seal, Elasto-Deck Reservoir Grade) may be applied to the poured concrete surface where it may be difficult to exclude water flow for a long period of time. 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 as a location for cleaning out concrete transit vehicles. 5. Temporary concrete washout facilities will be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations. Concrete washouts may be contained in settling basins dug into the ground, raised and contained structures, trailers, etc. Concrete waste will be removed and disposed of appropriately. 6. Where slurries containing portland cement concrete or asphalt concrete are generated (such as from saw cutting, coring, or grinding), slurry wastes will not be allowed to enter storm drains or watercourses and will be removed and disposed of appropriately.

BMP Number	BMP Title	BMP Description
BANK-3	Bank Stabilization Post-Construction Maintenance	Valley Water may maintain or repair bank stabilization projects that are less than 2 years old and damaged by winter flows. Valley Water will notify the regulatory agencies 24 hours prior to beginning the work. The work will be reported as part of the Annual Summary Report submitted by January 31 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). When necessary, seeding will occur in subsequent years to prevent erosion. 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 (BMP GEN--25).
REVEG-2	Planting Material	Revegetation and replacement plantings will consist of locally collected material. Selection of species to install in revegetation sites will reference 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 VW'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	Surface Barrier Applications to Prevent Burrowing	Surface barrier applications installed as a method of animal conflict management, (e.g. chain-link fencing, woven geotextiles, and other similar materials) will be installed in an area no longer than 300 feet and above OHWM. This area may include both the inboard and outboard sides of the levee for 300 feet, with at least a 300 feet if separation from another linear installation of physical barriers, and barriers are only installed on one side of levee slopes. Surface barrier applications will be installed an alternating pattern, such that no inboard and outboard levee faces will have erosion control blankets along the same levee stationing.
ANI-2	Prevent Harm to the Salt Marsh Harvest Mouse, California Ridgway's Rail, and California Black Rail	No harmful fumigants (e.g., chemicals that would have a risk of secondary effects on owls) will be used under the SMP. No fumigants will be used within the range of the salt marsh harvest mouse (SMHM), California's Ridgway's rail (CRR), or California Black Rail (CBR) as identified on SMP potential range maps. Methods of rodent control within suitable habitat for these species 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 enters the trap to easily escape. All traps will be placed outside of pickleweed areas and above the high tide line. In accordance with the California Department of Fish and Wildlife's (CDFW's) 2008 Guidance for Burrowing Owl Conservation, a 656-yard buffer will be established around known burrowing owl locations, within which no fumigants (including smoke bombs) will be used.
ANI-3	Burrowing Owl Buffer Zone	In accordance with the California Department of Fish and Wildlife's (CDFW's) 2008 Guidance for Burrowing Owl Conservation, a 656yard buffer will be established around known burrowing owl locations, within which no rodenticides or fumigants (including smoke bombs) will be used.
ANI-4	Animal Control in Sensitive Amphibian Habitat	No harmful fumigants (e.g., chemicals that would have a risk of secondary effects on amphibians) will be used under the SMP. Fumigants will not be used within the habitat areas of special-status amphibians. Any live traps will have openings measuring no smaller than 2 inches by 1 inch to allow California red-legged frogs, California tiger salamanders, or foothill yellow legged frogs to safely exit.

BMP Number	BMP Title	BMP Description
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 will comply with 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, including 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 QEMS Document Q751D02 Control and Oversight of Pesticide Use as follows: 1. Posting will be performed in compliance with the label requirements of the product being applied. 2. 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, Valley Water ensures that exposure risk is minimized further by adopting practices that go beyond the product label requirements. 3. 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 Valley Water 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, Valley Water 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 Montrose Environmental Group and H.T. Harvey and Associates from 2022 - 2025

Figure A-1. SMP Areas Subject to Pesticide Injunctions

Figure A-2. Distribution of the San Francisco Common Yellowthroat and Alameda Song Sparrow in Santa Clara County

ATTACHMENT B

Permanently Mitigated Areas

Mitigation Provided Under SMP-1 Tables

During SMP-1, Valley Water provided mitigation in the form of land acquisition, habitat protection and enhancement, and wetland restoration/creation. The Mitigation Program for SMP-1 is summarized below in Table 1. More specifically, mitigation credit for SMP-1 freshwater wetland mitigation, stream and watershed protection, and red-legged frog is further outlined in Table 2. The mitigation credit that was created in SMP-1, termed Permanently Mitigated Areas (PMAs), is reported in Table 3 and is listed by facility and stationing. PMAs are designated according to the work activity and creek location for which mitigation is provided in perpetuity. Most PMAs occur in-channel, below OHW. Table 4 lists mitigation projects for bank stabilization and LWD impacts that were completed under SMP-1 (not contributing to assigning channels as PMAs) and are included for informational purposes.

TABLE 1
SMP-1 MITIGATION PROGRAM STATUS

Project		Mitigation Purpose	Mitigation Requirement	Mitigation Completed	Percent of Requirement Completed	Mitigation Available
1	Tidal Wetland Restoration (Island Ponds)	Restore salt ponds to tidal marsh conditions. Provides mitigation for tidal wetland/species impacts.	30 acres	30 acres	100%	8.4 acres in the Santa Clara Basin
2	Freshwater Wetland Creation/Restoration	Convert or restore areas to seasonal or perennial wetlands. Provides mitigation for non-tidal wetland impacts.	10 ac Santa Clara Basin[1] 4 ac Pajaro Basin	7.5 ac + 2.5 ac additional from S&WP = 10 ac for Santa Clara Basin[1] 4.7 ac Pajaro Basin[2]	100% Santa Clara Basin[1] 100% Pajaro Basin	3.7 acres (Pajaro Wetland) in the Pajaro Basin

Project		Mitigation Purpose	Mitigation Requirement	Mitigation Completed	Percent of Requirement Completed	Mitigation Available
3	Stream and Watershed Protection	Preserve, protect, and improve streams and associated watersheds. Provides mitigation for non-tidal wetland and CRLF impacts	Freshwater wetland habitat: 81 credits for Santa Clara Basin 11 credits for Pajaro Basin CRLF Habitat – 108 ac plus 20 ac penalty +128 ac credit Districtwide	Freshwater wetland habitat: 86.6 credit for Santa Clara Basin 10.3 credits + 0.7 remaining from Pajaro Wetland + 11 credits for Pajaro Basin[2] CRLF Habitat – 128 ac credit[3]	100%+ Santa Clara Basin 100% Pajaro Basin[2] 100% CRLF Habitat	None
4	Giant reed (*Arundo donax*) Control	Control giant reed outbreaks; map, revegetate, educate, and coordinate reed control efforts in County. Provides mitigation for riparian impacts.	125 ac Districtwide	126 ac Districtwide	100%	None

Project		Mitigation Purpose	Mitigation Requirement	Mitigation Completed	Percent of Requirement Completed	Mitigation Available
5	Invasive smooth cordgrass (*Spartina alterniflora*) Control	Control invasive cordgrass along tidal shorelines. Provides mitigation for time lag until tidal wetland mitigation is established.	Up to 10 acres in tidal areas	10 acres	100%	None
[1] 2.5 acres of mitigation requirements are rolled into stream and watershed protection requirements. 7.5 acres of constructed wetlands in the Santa Clara Basin complete the remaining mitigation requirement. [2] 0.7 acres of additional wetland was created in Pajaro Basin to fulfill the 11-acre Pajaro Basin SWPP requirement. [3] This includes the required 108 acres plus a 20-acre penalty.						

TABLE 2
SUMMARY OF SMP-1 FRESHWATER WETLAND MITIGATION,
STREAM AND WATERSHED PROTECTION AND RED-LEGGED FROG CREDIT

Basin	Property	Total Credit Area Acreage	Acreage of SMP-1 Wetlands/SWPP Credits Acquired	Acreage of SMP-1 Red-Legged Frog Credits Acquired
Pajaro	Pajaro Freshwater Wetland	4.7	4.7	
	Carnadero Preserve	133.5	10.3	
PAJARO TOTAL		**138.2**	**15**	
Santa Clara	Coyote Parkway Freshwater Wetland	7.5	7.5	
	Stevens Canyon Ranch	69	5.4	
	Moore Property	56	4.5	56
	Coyote Ridge[1]	431.2	34.7	72
	Hendrys Creek	99	8.3	
	Upper Penitencia Creek (Kammerer)	188.3	15.4	
	Rancho Canada de Pala Preserve	219.9	18.3	
SANTA CLARA TOTAL		**1070.9**	**94.1**	**128**

[1] Coyote Ridge California red-legged frog credit consists of 52 acres of SMP-1 credit + 20-acre additional timelag penalty from USFWS.

TABLE 3
PERMANENTLY MITIGATED AREAS

Table 3A. Overhanging Growth PMA

Watershed Name	GIS ID	Facility Name	From Station	To Station	Length (feet)
Lower Peninsula	10100	ADOBE CREEK	12917	24690	11773
Lower Peninsula	10120	BARRON CREEK	0	10401	10401
Lower Peninsula	10210	MATADERO CREEK	9602	10916	1314
Lower Peninsula	10210	MATADERO CREEK	10916	19908	8992
Lower Peninsula	10230	PERMANENTE DIVERSION CHANNEL	0	7100	7100
Lower Peninsula	10240	PERMANENTE CREEK	11484	12948	1464
Lower Peninsula	10240	PERMANENTE CREEK	13144	26026	12882
Lower Peninsula	10240	PERMANENTE CREEK	26026	34304	8278
Lower Peninsula	10280	SAN FRANCISQUITO CREEK	6164	7705	1541
West Valley	20100	CALABAZAS CREEK	10542	36605	26063
West Valley	20100	CALABAZAS CREEK	36906	37735	829
West Valley	20100	CALABAZAS CREEK	38771	52487	13716
West Valley	20130	JUNIPERO SERRA CHANNEL	0	13425	13425
West Valley	20170	REGNART CREEK	0	6082	6082
West Valley	20170	REGNART CREEK	7086	8591	1505
West Valley	20180	RODEO CREEK	0	5014	5014
West Valley	20180	RODEO CREEK	6393	9940	3547
West Valley	20190	SAN TOMAS AQUINO CREEK	15896	23000	7104
West Valley	20190	SAN TOMAS AQUINO CREEK	43476	67413	23937
West Valley	20210	SARATOGA CREEK	0	28306	28306
West Valley	20210	SARATOGA CREEK	37113	41768	4655
West Valley	20230	SMITH CREEK	0	6328	6328
West Valley	20260	SUNNYVALE EAST CHANNEL	6444	31301	24857
West Valley	20300	WILDCAT CREEK	1912	7716	5804
West Valley	20370	EL CAMINO STORM DRAIN	3356	9547	6191
Guadalupe	30110	CANOAS CREEK	0	39032	39032
Guadalupe	30130	GOLF CREEK	1498	6929	5431
Guadalupe	30140	GREYSTONE CREEK	530	2122	1592
Guadalupe	30140	GREYSTONE CREEK	2228	5626	3398
Guadalupe	30150	GUADALUPE RIVER	54034	60339	6305
Guadalupe	30190	LONE HILL CREEK	0	1787	1787
Guadalupe	30230	ROSS CREEK	0	23355	23355

Table 3A. Overhanging Growth PMA

Watershed Name	GIS ID	Facility Name	From Station	To Station	Length (feet)
Guadalupe	30230	ROSS CREEK	27284	27601	317
Guadalupe	30230	ROSS CREEK	29329	30049	720
Guadalupe	30290	RANDOL CREEK	0	4565	4565
Coyote	40120	NORTH BABB CREEK	0	1410	1410
Coyote	40120	NORTH BABB CREEK	4105	5402	1297
Coyote	40130	SOUTH BABB CREEK	0	4498	4498
Coyote	40180	CALERA CREEK	4141	6302	2161
Coyote	40250	LOS COCHES CREEK	1893	5249	3356
Coyote	40260	LOWER SILVER CREEK	0	24617	24617
Coyote	40260	LOWER SILVER CREEK	36827	38068	1241
Coyote	40290	MIGUELITA CREEK	1126	2345	1219
Coyote	40290	MIGUELITA CREEK	3677	4297	620
Coyote	40310	PIEDMONT CREEK	0	1786	1786
Coyote	40310	PIEDMONT CREEK	1886	2580	694
Coyote	40330	LOWER PENITENCIA CREEK	6892	10423	3531
Coyote	40370	SIERRA CREEK	0	7290	7290
Coyote	40380	UPPER SILVER CREEK	0	3649	3649
Coyote	40420	NORWOOD CREEK	0	3057	3057
Coyote	40430	QUIMBY CREEK	0	3780	3780
Coyote	40470	THOMPSON CREEK	6375	9416	3041
Coyote	40490	PENITENCIA EAST CHANNEL	0	3654	3654
Uvas/Llagas & Pajaro	50170	PRINCEVALLE DRAIN	6825	9535	2710
Uvas/Llagas & Pajaro	50310	WEST BRANCH LLAGAS CREEK	6328	16509	10181

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Lower Peninsula	ADOBE CREEK	Channel Sediment Removal	12600	18500	5900	Modified
Lower Peninsula	ADOBE CREEK	Herbicide only	12917	24690	11773	Modified
Lower Peninsula	ADOBE CREEK	Vegetation Removal Only	24690	55960	31270	Unmodified, Modified
Lower Peninsula	ADOBE CREEK	Channel Sediment Removal	52940	53150	210	Modified
Lower Peninsula	BARRON CREEK	Herbicide Only	0	10250	10250	Modified
Lower Peninsula	BARRON CREEK	Channel Sediment Removal	50	1988	1938	Modified
Lower Peninsula	BARRON CREEK	Herbicide Only	15790	17054	1264	Unmodified, Modified
Lower Peninsula	BARRON CREEK	Channel Sediment Removal	16044	16779	735	Modified
Lower Peninsula	HALE CREEK	Herbicide Only	0	6174	6174	Unmodified, Modified
Lower Peninsula	HENEY CREEK	Herbicide Only	4875	5325	450	Modified
Lower Peninsula	MATADERO CREEK	Vegetation Removal Only	7980	9245	1265	Unmodified
Lower Peninsula	MATADERO CREEK	Channel Sediment Removal	9198	12231	3033	Unmodified, Modified
Lower Peninsula	MATADERO CREEK	Herbicide Only	9602	19908	10306	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Lower Peninsula	MATADERO CREEK	Channel Sediment Removal	40000	40100	100	Modified
Lower Peninsula	PERMANENTE DIVERSION CHANNEL	Herbicide Only	0	7239	7239	Modified
Lower Peninsula	PERMANENTE DIVERSION CHANNEL	Channel Sediment Removal	2600	2735	135	Modified
Lower Peninsula	PERMANENTE DIVERSION CHANNEL	Channel Sediment Removal	3500	7150	3650	Modified
Lower Peninsula	PERMANENTE CREEK	Herbicide Only	10665	35641	24976	Unmodified, Modified
Lower Peninsula	PERMANENTE CREEK	Vegetation Removal Only	26026	33000	6974	Unmodified, Modified
Lower Peninsula	PERMANENTE CREEK	Channel Sediment Removal	34508	35641	1133	Modified
Lower Peninsula	PERMANENTE CREEK	Vegetation Removal Only	34611	42945	8334	Modified
Lower Peninsula	SAN FRANCISQUITO CREEK	Channel Sediment Removal	7300	8100	800	Modified
Lower Peninsula	STEVENS CREEK	Herbicide Only	8846	41643	32797	Unmodified, Modified
Lower Peninsula	STEVENS CREEK	Vegetation Removal Only	8899	51770	42871	Unmodified, Modified
Lower Peninsula	STEVENS CREEK	Channel Sediment Removal	8900	13648	4748	Modified
Lower Peninsula	SUMMERHILL CREEK	Herbicide Only	0	664	664	Modified
Lower Peninsula	DEER CREEK	Herbicide Only	7400	9100	1700	Unmodified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Lower Peninsula	STANFORD CHANNEL	Herbicide Only	2330	3560	1230	Modified
West Valley	CALABAZAS CREEK	Herbicide Only	2000	52600	50600	Modified
West Valley	CALABAZAS CREEK	Channel Sediment Removal	4900	10400	5500	Modified
West Valley	CALABAZAS CREEK	Vegetation Removal Only	29000	37735	8735	Modified
West Valley	CALABAZAS CREEK	Vegetation Removal Only	44730	50787	6057	Modified
West Valley	CALABAZAS CREEK	Vegetation Removal Only	51289	52600	1311	Modified
West Valley	CALABAZAS CREEK	Channel Sediment Removal	59235	59702	467	Unmodified , Modified
West Valley	JUNIPERO SERRA CHANNEL	Herbicide Only	0	13425	13425	Modified
West Valley	JUNIPERO SERRA CHANNEL	Channel Sediment Removal	0	1997	1997	Modified
West Valley	JUNIPERO SERRA CHANNEL	Vegetation Removal Only	0	2097	2097	Modified
West Valley	MISTLETOE CREEK	Herbicide Only	1369	1669	300	Unmodified, Modified
West Valley	REGNART CREEK	Herbicide Only	0	6480	6480	Modified
West Valley	REGNART CREEK	Channel Sediment Removal	1189	2318	1129	Modified
West Valley	REGNART CREEK	Herbicide Only	7086	8591	1505	Modified
West Valley	REGNART CREEK	Channel Sediment Removal	8290	8792	502	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
West Valley	RODEO CREEK	Vegetation Removal Only	0	5014	5014	Modified
West Valley	RODEO CREEK	Herbicide Only	0	5014	5014	Modified
West Valley	RODEO CREEK	Channel Sediment Removal	353	453	100	Modified
West Valley	RODEO CREEK	Herbicide Only	7477	10000	2523	Unmodified, Modified
West Valley	RODEO CREEK	Vegetation Removal Only	7575	9940	2365	Unmodified
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	0	1600	1600	Modified
West Valley	SAN TOMAS AQUINO CREEK	Vegetation Removal Only	3220	15690	12470	Modified
West Valley	SAN TOMAS AQUINO CREEK	Herbicide Only	3220	23800	20580	Modified
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	5800	7900	2100	Modified
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	8689	15690	7001	Modified
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	15875	17145	1270	Modified
West Valley	SAN TOMAS AQUINO CREEK	Vegetation Removal Only	15896	16926	1030	Modified
West Valley	SAN TOMAS AQUINO CREEK	Vegetation Removal Only	17955	23000	5045	Modified
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	19250	21500	2250	Modified
West Valley	SAN TOMAS AQUINO CREEK	Herbicide Only	43476	67413	23937	Unmodified, Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	62960	63690	730	Modified
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	64430	64701	271	Modified
West Valley	SAN TOMAS AQUINO CREEK	Channel Sediment Removal	66690	67413	723	Unmodified, Modified
West Valley	SAN TOMAS AQUINO CREEK	Vegetation Removal Only	67400	76000	8600	Unmodified
West Valley	SARATOGA CREEK	Herbicide Only	0	30915	30915	Unmodified, Modified
West Valley	SARATOGA CREEK	Channel Sediment Removal	0	3389	3389	Modified
West Valley	SARATOGA CREEK	Vegetation Removal Only	0	47430	47430	Unmodified, Modified
West Valley	SMITH CREEK	Vegetation Removal Only	0	3639	3639	Modified
West Valley	SMITH CREEK	Herbicide Only	0	3639	3639	Modified
West Valley	SMITH CREEK	Herbicide Only	5621	6328	707	Modified
West Valley	SMITH CREEK	Herbicide Only	8220	9257	1037	Unmodified, Modified
West Valley	SMITH CREEK	Vegetation Removal Only	8500	9257	757	Unmodified
West Valley	SUNNYVALE EAST CHANNEL	Channel Sediment Removal	0	2250	2250	Modified
West Valley	SUNNYVALE EAST CHANNEL	Herbicide Only	2305	31301	28996	Modified
West Valley	SUNNYVALE EAST CHANNEL	Vegetation Removal Only	6444	31301	24857	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
West Valley	SUNNYVALE WEST CHANNEL	Herbicide Only	5320	15465	10145	Modified
West Valley	SUNNYVALE WEST CHANNEL	Channel Sediment Removal	12700	13000	300	Modified
West Valley	SUNNYVALE WEST CHANNEL	Vegetation Removal Only	13702	14718	1016	Modified
West Valley	SUNNYVALE WEST CHANNEL	Vegetation Removal Only	14876	15323	447	Modified
West Valley	DAVES CREEK	Herbicide Only	1187	2340	1153	Modified
West Valley	PROSPECT CREEK	Vegetation Removal Only	0	2974	2974	Unmodified, Modified
West Valley	PROSPECT CREEK	Herbicide Only	0	2010	2010	Unmodified, Modified
West Valley	EL CAMINO STORM DRAIN	Herbicide Only	0	8400	8400	Modified
Guadalupe	ALAMITOS CREEK	Vegetation Removal Only	0	315	315	Unmodified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	1682	1978	296	Unmodified
Guadalupe	ALAMITOS CREEK	Herbicide Only	2162	23250	21088	Unmodified, Modified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	11700	12200	500	Unmodified, Modified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	12750	12843	93	Unmodified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	13170	13242	72	Unmodified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	14075	14210	135	Unmodified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	21270	21546	276	Unmodified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	21600	21919	319	Unmodified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	22150	22250	100	Unmodified
Guadalupe	ALAMITOS CREEK	Channel Sediment Removal	22685	23100	415	Unmodified
Guadalupe	CANOAS CREEK	Channel Sediment Removal	0	39032	39032	Modified
Guadalupe	CANOAS CREEK	Herbicide Only	0	39032	39032	Modified
Guadalupe	CALERO CREEK	Herbicide Only	12800	13200	400	Unmodified
Guadalupe	CALERO CREEK	Herbicide Only	13465	16507	3042	Unmodified
Guadalupe	GOLF CREEK	Herbicide Only	0	7550	7550	Modified
Guadalupe	GREYSTONE CREEK	Herbicide Only	0	7850	7850	Modified
Guadalupe	GREYSTONE CREEK	Vegetation Removal Only	2048	2151	103	Modified
Guadalupe	GREYSTONE CREEK	Vegetation Removal Only	5626	7411	1785	Modified
Guadalupe	GREYSTONE CREEK	Channel Sediment Removal	5745	6036	291	Modified
Guadalupe	GUADALUPE RIVER	Herbicide Only	6205	7151	946	Modified
Guadalupe	GUADALUPE RIVER	Vegetation Removal Only	24477	107415	82938	Unmodified, Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Guadalupe	GUADALUPE RIVER	Herbicide Only	24477	107415	82938	Unmodified, Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	42000	47000	5000	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	49578	49902	324	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	65445	65545	100	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	66075	66775	700	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	69750	71215	1465	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	73235	74325	1090	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	79850	79950	100	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	93700	94040	340	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	97600	97750	150	Modified
Guadalupe	GUADALUPE RIVER	Channel Sediment Removal	106522	107027	505	Modified
Guadalupe	LONE HILL CREEK	Herbicide Only	0	2027	2027	Modified
Guadalupe	LOS GATOS CREEK	Herbicide Only	0	42379	42379	Unmodified, Modified
Guadalupe	LOS GATOS CREEK	Channel Sediment Removal	40040	40170	130	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Guadalupe	ROSS CREEK	Vegetation Removal Only	0	23570	23570	Modified
Guadalupe	ROSS CREEK	Herbicide Only	0	23979	23979	Modified
Guadalupe	ROSS CREEK	Channel Sediment Removal	255	3051	2796	Modified
Guadalupe	ROSS CREEK	Channel Sediment Removal	3121	8560	5439	Modified
Guadalupe	ROSS CREEK	Channel Sediment Removal	12316	12799	483	Modified
Guadalupe	ROSS CREEK	Channel Sediment Removal	19350	19500	150	Modified
Guadalupe	ROSS CREEK	Herbicide Only	26700	27050	350	Modified
Guadalupe	ROSS CREEK	Herbicide Only	27284	27601	317	Modified
Guadalupe	GUADALUPE CREEK	Vegetation Removal Only	107431	120238	12807	Unmodified, Modified
Guadalupe	GUADALUPE CREEK	Herbicide Only	107431	120870	13439	Unmodified, Modified
Guadalupe	GUADALUPE CREEK	Channel Sediment Removal	107535	107794	259	Modified
Guadalupe	GUADALUPE CREEK	Channel Sediment Removal	107820	108125	305	Modified
Guadalupe	GUADALUPE CREEK	Channel Sediment Removal	113345	113360	15	Modified
Guadalupe	GUADALUPE CREEK	Channel Sediment Removal	116700	116800	100	Unmodified
Guadalupe	GUADALUPE CREEK	Channel Sediment Removal	120314	120575	261	Unmodified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Guadalupe	RANDOL CREEK	Herbicide Only	0	10185	10185	Unmodified, Modified
Guadalupe	RANDOL CREEK	Vegetation Removal Only	8230	10185	1955	Unmodified, Modified
Guadalupe	SOUTH EAST SANTA TERESA CREEK	Channel Sediment Removal	2420	2470	50	Modified
Guadalupe	WEST BRANCH RANDOL CREEK	Vegetation Removal Only	0	1350	1350	Modified
Coyote	NORTH BABB CREEK	Herbicide Only	0	1410	1410	Modified
Coyote	NORTH BABB CREEK	Herbicide Only	3970	5402	1432	Modified
Coyote	SOUTH BABB CREEK	Herbicide Only	0	4570	4570	Modified
Coyote	BERRYESSA CREEK	Channel Sediment Removal	0	8771	8771	Modified
Coyote	BERRYESSA CREEK	Herbicide Only	0	29907	29907	Modified
Coyote	BERRYESSA CREEK	Channel Sediment Removal	11511	11671	160	Modified
Coyote	BERRYESSA CREEK	Channel Sediment Removal	16620	16680	60	Modified
Coyote	BERRYESSA CREEK	Channel Sediment Removal	16816	20310	3494	Modified
Coyote	BERRYESSA CREEK	Channel Sediment Removal	22555	23355	800	Modified
Coyote	BERRYESSA CREEK	Channel Sediment Removal	23375	23993	618	Modified
Coyote	BERRYESSA CREEK	Channel Sediment Removal	28639	28800	161	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Coyote	CALERA CREEK	Herbicide Only	305	8264	7959	Unmodified, Modified
Coyote	CALERA CREEK	Channel Sediment Removal	1026	4058	3032	Modified
Coyote	CALERA CREEK	Channel Sediment Removal	4227	4312	85	Modified
Coyote	CALERA CREEK	Vegetation Removal Only	5025	6105	1080	Modified
Coyote	CALERA CREEK	Channel Sediment Removal	7364	7460	96	Modified
Coyote	RUBY CREEK	Herbicide Only	0	1340	1340	Modified
Coyote	RUBY CREEK	Herbicide Only	7945	8440	495	Modified
Coyote	COYOTE CREEK	Vegetation Removal Only	45340	81800	36460	Unmodified, Modified
Coyote	COYOTE CREEK	Herbicide Only	45340	81800	36460	Unmodified, Modified
Coyote	COYOTE CREEK	Channel Sediment Removal	46395	46470	75	Modified
Coyote	COYOTE CREEK	Channel Sediment Removal	46848	46923	75	Modified
Coyote	COYOTE CREEK	Vegetation Removal Only	83530	85560	2030	Modified
Coyote	COYOTE CREEK	Herbicide Only	84145	86400	2255	Modified
Coyote	COYOTE CREEK	Channel Sediment Removal	143520	144228	708	Unmodified
Coyote	COYOTE CREEK	Vegetation Removal Only	144200	144800	600	Unmodified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Coyote	COYOTE CREEK	Herbicide Only	150906	156738	5832	Unmodified, Modified
Coyote	FISHER CREEK	Herbicide Only	13500	15673	2173	Modified
Coyote	LOS COCHES CREEK	Herbicide Only	0	6790	6790	Modified
Coyote	LOS COCHES CREEK	Channel Sediment Removal	55	846	791	Modified
Coyote	LOS COCHES CREEK	Channel Sediment Removal	1577	2523	946	Modified
Coyote	LOS COCHES CREEK	Vegetation Removal Only	1998	2209	211	Modified
Coyote	LOS COCHES CREEK	Vegetation Removal Only	5975	6800	825	Modified
Coyote	LOS COCHES CREEK	Channel Sediment Removal	6400	6750	350	Modified
Coyote	LOWER SILVER CREEK	Vegetation Removal Only	0	5245	5245	Modified
Coyote	LOWER SILVER CREEK	Herbicide Only	0	31880	31880	Modified
Coyote	LOWER SILVER CREEK	Vegetation Removal Only	7563	9348	1785	Modified
Coyote	LOWER SILVER CREEK	Channel Sediment Removal	12876	15540	2664	Modified
Coyote	LOWER SILVER CREEK	Channel Sediment Removal	19668	20333	665	Modified
Coyote	LOWER SILVER CREEK	Vegetation Removal Only	24590	29210	4620	Modified
Coyote	LOWER SILVER CREEK	Channel Sediment Removal	24719	31862	7143	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Coyote	LOWER SILVER CREEK	Herbicide Only	36827	38114	1287	Modified
Coyote	MIGUELITA CREEK	Herbicide Only	1126	2460	1334	Modified
Coyote	MIGUELITA CREEK	Channel Sediment Removal	1451	2453	1002	Modified
Coyote	MIGUELITA CREEK	Herbicide Only	3650	4297	647	Modified
Coyote	MIGUELITA CREEK	Channel Sediment Removal	3677	3987	310	Modified
Coyote	MIGUELITA CREEK	Channel Sediment Removal	15840	15990	150	Unmodified
Coyote	PIEDMONT CREEK	Herbicide Only	0	1797	1797	Modified
Coyote	PIEDMONT CREEK	Vegetation Removal Only	1797	1896	99	Modified
Coyote	PIEDMONT CREEK	Herbicide Only	1886	4300	2414	Modified
Coyote	UPPER PENITENCIA CREEK	Herbicide Only	1965	6512	4547	Unmodified, Modified
Coyote	UPPER PENITENCIA CREEK	Channel Sediment Removal	7200	7215	15	Modified
Coyote	UPPER PENITENCIA CREEK	Herbicide Only	7241	11792	4551	Unmodified, Modified
Coyote	UPPER PENITENCIA CREEK	Channel Sediment Removal	17050	17150	100	Modified
Coyote	UPPER PENITENCIA CREEK	Channel Sediment Removal	20400	20410	10	Unmodified
Coyote	LOWER PENITENCIA CREEK	Vegetation Removal Only	0	4975	4975	Modified
Coyote	LOWER PENITENCIA CREEK	Herbicide Only	0	21693	21693	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Coyote	LOWER PENITENCIA CREEK	Channel Sediment Removal	1193	4975	3782	Modified
Coyote	LOWER PENITENCIA CREEK	Channel Sediment Removal	8979	9126	147	Modified
Coyote	LOWER PENITENCIA CREEK	Channel Sediment Removal	10599	10852	253	Modified
Coyote	LOWER PENITENCIA CREEK	Channel Sediment Removal	11374	13311	1937	Modified
Coyote	SIERRA CREEK	Herbicide Only	0	7290	7290	Modified
Coyote	SIERRA CREEK	Channel Sediment Removal	3825	4161	336	Modified
Coyote	SIERRA CREEK	Channel Sediment Removal	4295	4395	100	Modified
Coyote	SIERRA CREEK	Channel Sediment Removal	6693	7293	600	Modified
Coyote	UPPER SILVER CREEK	Herbicide Only	0	6374	6374	Modified
Coyote	UPPER SILVER CREEK	Channel Sediment Removal	1115	4112	2997	Modified
Coyote	TULARCITOS CREEK	Vegetation Removal Only	100	3600	3500	Modified
Coyote	TULARCITOS CREEK	Herbicide Only	100	3705	3605	Modified
Coyote	TULARCITOS CREEK	Channel Sediment Removal	2500	3700	1200	Modified
Coyote	NORWOOD CREEK	Herbicide Only	0	3113	3113	Modified
Coyote	NORWOOD CREEK	Channel Sediment Removal	1300	3070	1770	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Coyote	NORWOOD CREEK	Herbicide Only	12402	13110	708	Unmodified, Modified
Coyote	QUIMBY CREEK	Channel Sediment Removal	0	1018	1018	Modified
Coyote	QUIMBY CREEK	Herbicide Only	0	3790	3790	Modified
Coyote	QUIMBY CREEK	Channel Sediment Removal	1170	3790	2620	Modified
Coyote	EVERGREEN CREEK	Vegetation Removal Only	0	3700	3700	Unmodified, Modified
Coyote	THOMPSON CREEK	Herbicide Only	0	7070	7070	Unmodified, Modified
Coyote	THOMPSON CREEK	Channel Sediment Removal	0	1005	1005	Modified
Coyote	THOMPSON CREEK	Vegetation Removal Only	6983	10000	3017	Unmodified, Modified
Coyote	THOMPSON CREEK	Vegetation Removal Only	27225	27840	615	Unmodified
Coyote	FLINT CREEK	Herbicide Only	0	1957	1957	Modified
Coyote	FLINT CREEK	Herbicide Only	6290	7130	840	Unmodified, Modified
Coyote	PENITENCIA EAST CHANNEL	Herbicide Only	0	3654	3654	Modified
Coyote	PENITENCIA EAST CHANNEL	Channel Sediment Removal	2400	3600	1200	Modified
Coyote	COCHRAN CHANNEL	Herbicide Only	0	7556	7556	Modified
Coyote	COYOTE BYPASS	Channel Sediment Removal	8879	8897	18	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Uvas/Llagas & Pajaro	LLAGAS CREEK	Vegetation Removal Only	17316	38880	21564	Modified
Uvas/Llagas & Pajaro	LLAGAS CREEK	Channel Sediment Removal	36900	37100	200	Modified
Uvas/Llagas & Pajaro	LLAGAS CREEK	Channel Sediment Removal	50250	50510	260	Unmodified
Uvas/Llagas & Pajaro	LLAGAS CREEK	Vegetation Removal Only	66430	68108	1678	Unmodified
Uvas/Llagas & Pajaro	LLAGAS CREEK	Vegetation Removal Only	74000	77175	3175	Unmodified
Uvas/Llagas & Pajaro	LLAGAS CREEK	Vegetation Removal Only	82727	83175	448	Unmodified
Uvas/Llagas & Pajaro	JONES CREEK	Channel Sediment Removal	11200	13624	2424	Modified
Uvas/Llagas & Pajaro	WEST LITTLE LLAGAS CREEK	Vegetation Removal Only	4480	16304	11824	Unmodified, Modified
Uvas/Llagas & Pajaro	WEST LITTLE LLAGAS CREEK	Channel Sediment Removal	7700	12350	4650	Modified
Uvas/Llagas & Pajaro	WEST LITTLE LLAGAS CREEK	Channel Sediment Removal	15680	15788	108	Modified
Uvas/Llagas & Pajaro	WEST LITTLE LLAGAS CREEK	Vegetation Removal Only	19015	22420	3405	Modified
Uvas/Llagas & Pajaro	MADRONE CHANNEL	Vegetation Removal Only	0	21840	21840	Modified
Uvas/Llagas & Pajaro	MADRONE CHANNEL	Channel Sediment Removal	4637	5608	971	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Uvas/Llagas & Pajaro	MADRONE CHANNEL	Channel Sediment Removal	6637	7606	969	Modified
Uvas/Llagas & Pajaro	MADRONE CHANNEL	Channel Sediment Removal	10302	10602	300	Modified
Uvas/Llagas & Pajaro	MADRONE CHANNEL	Channel Sediment Removal	11300	11600	300	Modified
Uvas/Llagas & Pajaro	MADRONE CHANNEL	Channel Sediment Removal	12100	21840	9740	Modified
Uvas/Llagas & Pajaro	PRINCEVALLE DRAIN	Channel Sediment Removal	0	251	251	Modified
Uvas/Llagas & Pajaro	PRINCEVALLE DRAIN	Vegetation Removal Only	0	10000	10000	Modified
Uvas/Llagas & Pajaro	PRINCEVALLE DRAIN	Channel Sediment Removal	8036	9536	1500	Modified
Uvas/Llagas & Pajaro	UVAS-CARNADERO CREEK	Vegetation Removal Only	27000	49425	22425	Unmodified, Modified
Uvas/Llagas & Pajaro	CORRALLITOS CREEK	Vegetation Removal Only	0	952	952	Modified
Uvas/Llagas & Pajaro	TENNANT CREEK	Vegetation Removal Only	8235	10739	2504	Modified
Uvas/Llagas & Pajaro	TENNANT CREEK	Channel Sediment Removal	10570	10700	130	Modified
Uvas/Llagas & Pajaro	WEST BRANCH LLAGAS CREEK	Vegetation Removal Only	0	22000	22000	Modified
Uvas/Llagas & Pajaro	SAN MARTIN CREEK	Vegetation Removal Only	7200	9285	2085	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Uvas/Llagas & Pajaro	EAST LITTLE LLAGAS CREEK	Channel Sediment Removal	0	12300	12300	Modified
Uvas/Llagas & Pajaro	EAST LITTLE LLAGAS CREEK	Vegetation Removal Only	0	22509	22509	Unmodified, Modified
Uvas/Llagas & Pajaro	LIONS CREEK	Vegetation Removal Only	0	10719	10719	Unmodified, Modified
Uvas/Llagas & Pajaro	SOUTH MOREY CHANNEL	Vegetation Removal Only	0	3312	3312	Modified
Uvas/Llagas & Pajaro	SOUTH MOREY CHANNEL	Channel Sediment Removal	1883	3312	1429	Modified
Uvas/Llagas & Pajaro	NORTH MOREY CHANNEL	Vegetation Removal Only	0	1348	1348	Modified
Uvas/Llagas & Pajaro	NORTH MOREY CHANNEL	Channel Sediment Removal	575	1348	773	Modified
Uvas/Llagas & Pajaro	LOWER MILLER SLOUGH	Vegetation Removal Only	0	5501	5501	Modified
Uvas/Llagas & Pajaro	UPPER MILLER SLOUGH	Vegetation Removal Only	0	1022	1022	Modified
Coyote	COYOTE CANAL	Herbicide Only	0	37982	37982	Modified
Coyote	COYOTE CANAL EXTENSION	Herbicide Only	0	6323	6323	Modified
Guadalupe	COYOTE ALAMITOS CANAL	Herbicide Only	2149	47283	45134	Modified
Guadalupe	COYOTE ALAMITOS CANAL	Channel Sediment Removal	6748	7600	852	Modified
Guadalupe	COYOTE ALAMITOS CANAL	Channel Sediment Removal	7823	11341	3518	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Guadalupe	COYOTE ALAMITOS CANAL	Channel Sediment Removal	12373	12900	527	Modified
Guadalupe	COYOTE ALAMITOS CANAL	Channel Sediment Removal	14233	14353	120	Modified
Guadalupe	COYOTE ALAMITOS CANAL	Channel Sediment Removal	30208	30258	50	Modified
Guadalupe	COYOTE ALAMITOS CANAL	Channel Sediment Removal	31463	32463	1000	Modified
Guadalupe	KIRK DISTRIBUTION SYSTEM	Herbicide Only	380	930	550	Modified
Guadalupe	KIRK DISTRIBUTION SYSTEM	Herbicide Only	3394	5129	1735	Modified
Guadalupe	KIRK DISTRIBUTION SYSTEM	Herbicide Only	6165	7920	1755	Modified
Guadalupe	PAGE DISTRIBUTION SYSTEM—UPPER	Herbicide Only	960	3100	2140	Modified
Guadalupe	PAGE DISTRIBUTION SYSTEM—UPPER	Herbicide Only	4550	6344	1794	Modified
Guadalupe	PAGE DISTRIBUTION SYSTEM—UPPER	Herbicide Only	7980	9630	1650	Modified
Guadalupe	VASONA CANAL	Herbicide Only	0	1050	1050	Modified
Guadalupe	VASONA CANAL	Herbicide Only	2450	3190	740	Modified
Guadalupe	VASONA CANAL	Herbicide Only	4130	7030	2900	Modified
Guadalupe	VASONA CANAL	Herbicide Only	7380	8615	1235	Modified
Guadalupe	ALMADEN-CALERO CANAL	Herbicide Only	0	23919	23919	Modified
Guadalupe	ALMADEN-CALERO CANAL	Vegetation Removal Only	150	2950	2800	Modified
Guadalupe	ALMADEN-CALERO CANAL	Channel Sediment Removal	250	300	50	Modified

TABLE 3B. IN-CHANNEL (BELOW OHW) WORK ACTIVITIES PMA

Note: Channel types are listed per SMP-1.

Watershed Name	Facility Name	Activity	From Station	To Station	Reach Length (feet)	Channel Type
Guadalupe	ALMADEN-CALERO CANAL	Channel Sediment Removal	500	9000	8500	Modified
Guadalupe	ALMADEN-CALERO CANAL	Vegetation Removal Only	3610	9240	5630	Modified
Guadalupe	ALMADEN-CALERO CANAL	Vegetation Removal Only	9700	23919	14219	Modified

ATTACHMENT C

Special-Status Plant and Animal Species with Potential to Occur in the Program Area and SMP Work Areas

Table 1. Special-Status Plant Species with Potential to Occur in the Program Area and SMP Work Areas

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Federal or State Endangered and Threatened Plant Species			
Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*)	FE, ST, CRPR 1B.2, VHP	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	**Present in Program Area, Absent from SMP Work Areas.** Documented occurrences in the Program area are present on Coyote Ridge between Anderson Reservoir and U.S. Highway 101. Potential habitat includes serpentine bunchgrass grasslands on the northern portion of Coyote Ridge and portions of the Santa Teresa Hills. However, Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Coyote ceanothus (*Ceanothus ferrisiae*)	FE, CRPR 1B.1, VHP	Chaparral, coastal scrub, valley and foothill grassland on serpentinite/ serpentine bunchgrass grassland and mixed serpentine chaparral	**Present in Program Area, Absent from SMP Work Areas.** Known to occur in the Anderson Reservoir area, south of Anderson Dam, and on the southern portion of Coyote Ridge between Anderson Dam and Kirby Canyon Landfill. Another population is present west of Hale Avenue and north of Llagas Road. Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area, away from known locations. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Santa Clara Valley dudleya (*Dudleya setchellii*)	FE, CRPR 1B.1, VHP	Cismontane woodland, valley and foothill grassland on serpentinite, rocky/ serpentine rock outcrop	**Present in Program Area, Absent from SMP Work Areas.** Occurs in numerous locations in the Program area on serpentine rock outcrops, including in the Santa Teresa Hills, on Communications Hill, near Monterey Road/Senter Road, on Coyote Ridge, near Anderson Reservoir, and in the upper Llagas Creek watershed. Although many populations have been documented in the Program area, much of the suitable habitat has not been surveyed as it occurs on private lands. Potential habitat occurs elsewhere in the Program area on serpentine soils in the lower foothills of the Santa Cruz Mountains and the Diablo Range. However, Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*)	FE, CRPR 1B.1, VHP	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	**Present in Program Area, Absent from SMP Work Areas.** The Program area encompasses the majority of the Metcalf Canyon jewel-flower's range. Some uncertainty exists around the taxonomic treatment of this species and most beautiful jewel-flower. Nevertheless, this species occurs on serpentine soils on Coyote Ridge, near Anderson Reservoir, on Communications Hill, and near Llagas Road in Morgan Hill. Potentially suitable habitat is present elsewhere in the Program area, where serpentine grassland occurs. Valley Water surveys conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
California seablite (*Suaeda californica*)	FE, CRPR 1B.1	Coastal salt marshes from sea level to 49 feet	**Present in Program Area, Absent from SMP Work Areas.** CNDDB records include an occurrence of eight individuals, recorded in 1971, in Harbor Marsh at the Palo Alto Baylands, within the Program area. However, a recent review of that occurrence by the USFWS concluded that it is "likely extirpated" (USFWS 2010). All known remaining populations in the South San Francisco Bay area except one are restoration populations, and the locations of all remaining populations are well known (and outside the Program area). Therefore, this species is absent from Program work areas.
CNPS-Listed Plant Species			
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	CRPR 1B.2	Cismontane woodland, valley and foothill grassland on clay, volcanic soils, often serpentinite/oak woodland	**Unlikely to Occur in Program Area, Absent from SMP Work Areas.** No populations are described as occurring in the Program area. The closest known population occurs near Page Mill Road in Palo Alto. Suitable habitat exists in the Program area in oak woodland habitats, such as those in the Santa Teresa and Almaden Hills. Thus, there is a possibility (albeit low) that the species occurs in woodlands or on serpentine substrates along creeks near Program work sites. However, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland/oak woodland and chaparral	**May be Present in Program Area, Absent from SMP Work Areas.** Known to occur in Santa Clara County near Alma Bridge Road and on Kinkaid Road, 1.1 miles north of Mt. Hamilton Road. No suitable habitat is present in Program work areas, as such habitat occurs in higher-elevation areas with more natural chaparral and oak woodland habitats above Lexington Reservoir, near the Almaden Hills, and near Llagas Creek. Therefore, this species is absent from Program work areas.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Anderson's manzanita (*Arctostaphylos andersonii*)	CRPR 1B.2	Broadleaved upland forest, chaparral, and North Coast coniferous forest habitats (openings) at elevations of 197 to 2,395 feet	**Unlikely to Occur in Program Area or SMP Work Areas.** Not known to occur within the Program area, but a number of documented occurrences are present in Santa Clara County above 1,000 feet in the Santa Cruz mountains. Suitable habitat for this species is present in the foothills of the Santa Cruz Mountains and Diablo Range in the eastern and western portions of the Program area, and the species is known to occur at elevations as low as 195 feet. Thus, there is some possibility (albeit low) that individuals may occur in suitable habitat along Program streams in these foothills. However, no Program activities are projected within areas where this species is likely to occur.
Alkali milk-vetch (*Astragalus tener* var. *tener*)	CRPR 1B.2	Playas, clay soils supporting valley and foothill grasslands, and alkaline, vernal pools	**Unlikely to Occur in Program Area and SMP Work Areas.** There are no recent records of this species in the far South Bay, and this species is likely absent from the Program area. However, there is at least a low potential for this species to occur in tidal salt marshes along Coyote Slough within the Program area, and Program activities are projected in areas providing suitable habitat.
Brittlescale (*Atriplex depressa*)	CRPR 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools on alkaline, clay soils/California annual grassland habitat on alkaline soil, seasonal wetlands	**Unlikely to Occur in Program Area and SMP Work Areas.** No known occurrences exist in the Program area. The closest known occurrence is north of Mud Slough in the Don Edwards San Francisco Bay National Wildlife Refuge in Alameda County, in alkali grasslands with eroded soils. Although no occurrences are present in the Program area, suitable habitat is present on low-lying moist, alkaline, clay soils near San Francisco Bay, where the species may be present, and Program activities are projected in areas providing suitable habitat.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Big-scale balsamroot (*Balsamorhiza macrolepis*)	CRPR 1B.2	Chaparral, cismontane woodland, valley and foothill grassland sometimes in serpentinite/serpentine bunchgrass grassland, mixed serpentine chaparral, and oak woodland	**Present in Program Area, Absent from SMP Work Areas.** Known to occur near the northern portion of Coyote Ridge and at Coyote Lake-Harvey Bear Ranch County Park. Additional suitable habitat in the Program area is present on serpentine soils such as those along Coyote Ridge, within the Santa Teresa Hills, near Anderson Reservoir, west of Coyote Valley, on Communications Hill, and within the area of serpentine north of Alum Rock Park. However, Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Pink creamsacs (*Castilleja rubicundula* var. *rubicundula*)	CRPR 1B.2	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland on serpentinite/oak woodland, serpentine bunchgrass grassland	**Unlikely to Occur in Program Area, Absent from SMP Work Areas.** There is a historical record from Uvas Road/Llagas Creek upstream of Chesbro Reservoir in the Program area. Additional suitable habitat in the Program area is present on serpentine soils such as those along Coyote Ridge, within the Santa Teresa Hills, near Anderson Reservoir, west of Coyote Valley, on Communications Hill, and within the area of serpentine north of Alum Rock Park. However, Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	CRPR 1B.1	Valley and foothill grassland (alkaline)/ California annual grassland habitat on alkaline soils	**Present in Program Area, May be Present in SMP Work Areas.** Known to occur in the Program area at Shoreline Park in Mountain View, Stevens Creek Shoreline Open Space Preserve, Moffett Federal Airfield, Sunnyvale Baylands Park, grasslands in Alviso, and along Wrigley Creek in Milpitas. May occur in disturbed areas on alkaline soils, and can potentially occur along Program streams in the northern portion of the Program area near San Francisco Bay, within disturbed California annual grasslands located near seasonally wet areas.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Mt. Hamilton thistle (*Cirsium fontinale* var. *campylon*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland, and valley and foothill grassland in serpentinite seeps/ serpentine seeps	**Present in Program Area, Absent from SMP Work Areas.** Numerous recorded populations are present in the Program area. This species is found near the Almaden Calero Canal, Coyote Canal, Coyote Canal Extension, Silver Creek, Metcalf Canyon, Anderson Dam spillway, Coyote Creek tributaries, springs east of Coyote Creek, drainages between Kirby Canyon landfill and Coyote Creek golf course, drainage near Almaden Research Center, north of Calero Reservoir in a tributary to Arroyo Creek, and other locations. Suitable habitat is present elsewhere in the Program area on mesic serpentine habitat, such as along seeps and swales throughout the foothills from Silver Creek Hills south to Morgan Hill along the Diablo Range and from Sierra Azul Open Space Preserve to Gilroy along the Santa Cruz Mountains. However, Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*)	CRPR 4.3	Chaparral, cismontane woodland/ chaparral, oak woodland; slopes near drainages	**Present in Program Area, May be Present in SMP Work Areas.** This species has a narrow endemic range that has been reduced to Santa Clara and Alameda Counties. Several documented occurrences in Santa Clara County are located below 1,000 feet, including at Rancho San Antonio County Park, Stevens Creek County Park, Sierra Vista Open Space Preserve, and Sierra Azul Open Space Preserve. Suitable habitat exists elsewhere in the Program area in chaparral and oak woodland habitats in the foothills of the Santa Cruz Mountains and the Diablo Range. Thus, some potential exists for the species to occur in or near Program work sites within suitable habitat.
San Francisco collinsia (*Collinsia multicolor*)	CRPR 1B.2	Closed-cone coniferous forest, coastal scrub, sometimes serpentinite	**Present in Program Area, May be Present in SMP Work Areas.** Within Santa Clara County, a known occurrence of this species is located within the Program area on the shoreline of Anderson Reservoir, and this species was present, at least historically, in Almaden/Quicksilver County Park outside of the Program area. Although Program activities will avoid serpentine habitat areas, the majority of occurrences are not located on serpentine soils. Thus, some potential exists for this species to occur in or near Program work sites within suitable habitat.
Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *palustris*)	CRPR 1B.2	Salt marshes, particularly at salt pan edges with occasional tidal inundation	**Unlikely to Occur in Program Area and SMP Work Areas.** There are no recent records of this species in the far South Bay, and this species is likely absent from the Program area. However, there is at least a low potential for this species to occur in tidal salt marshes along Coyote Slough within the Program area, and Program activities are projected in areas providing suitable habitat.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*)	CRPR 1B.2	Found in chaparral and cismontane woodland habitats at elevations of approximately 760–3,615 feet	**May be Present in Program Area, Unlikely to Occur in SMP Work Areas.** The species inhabits a small endemic range that covers the mid- and upper-elevations of the inner Coast Ranges in the San Francisco Bay Area south towards Mount Hamilton. No known occurrences of this species are present in the Program area; however, potential habitat occurs toward the upper elevations of the Program area in the Diablo Range, in wet, boggy meadows, canyons, and chaparral openings. Due to the lack of known occurrences in the Program area, this species is unlikely to occur along Program streams.
Western leatherwood (*Dirca occidentalis*)	CRPR 1B.2	Mesic broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland habitats at elevations of approximately 164–1,296 feet	**May be Present in Program Area and in SMP Work Areas.** Known to occur in the northeastern portion of the Program area at Rancho San Antonio County Park and Foothills Nature Preserve. Suitable habitat occurs in the Program area in the foothills of the Santa Cruz Mountains, from Los Altos Hills to Cupertino. Some potential exists for the species to occur in or near Program work sites within suitable habitat.
Small spikerush (*Elocharis parvula*)	CRPR 4.3	Coastal salt marsh	**Present in Program Area, Unlikely to Occur in SMP Work Areas.** An occurrence of this species is known from brackish salt marsh habitat in the Alviso area. Suitable habitat for this species is present in salt marshes within the Program area; however, due to this species' limited distribution in Santa Clara County, the likelihood of occurrence is relatively low.
Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)	CRPR 1B.1	Vernal pools/California annual grassland habitat on alkaline soil, seasonal wetland	**Present in Program Area, Unlikely to Occur in SMP Work Areas.** Several historical occurrences of the species have been reported in the Program area. However, all occurrences in the Program area vicinity have been extirpated by development, except one located in the vicinity of San Felipe Lake along Highway 152 east of Gilroy (where no Program activities are projected). Suitable habitat may be present in alkaline depressions or roadside ditches along San Francisco Bay or in the vicinity of Gilroy and San Martin; however, due to the species' limited distribution in the Program area, the likelihood of occurrence is relatively low.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B.2, VHP	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, often in serpentinite/oak woodland, serpentine bunchgrass grassland	**Present in Program Area, Absent from SMP Work Areas.** Known to occur on Coyote Ridge, south of Anderson Dam, at Coyote Valley Open Space Preserve, and at Almaden Quicksilver County Park, it was formerly known to occur at Stanford University. Additional suitable habitat occurs on serpentine soils in the Program area, such as at Anderson and Calero Reservoirs, west of Coyote Valley, in the Santa Teresa Hills, on Communications Hill, and north of Alum Rock Park. Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Loma Prieta hoita (*Hoita strobilina*)	CRPR 1B.1, VHP	Chaparral, cismontane woodland, riparian woodland, usually serpentinite/mesic mixed serpentine chaparral, serpentine seeps	**Present in Program Area, Absent from SMP Work Areas.** Numerous records are present in the Program area on serpentine soils, predominantly in the Santa Cruz mountains from Saratoga to Gilroy but also in the Diablo Range near Coyote Ridge. Suitable habitat is present in the Program area in riparian areas, particularly in the mesic-serpentine-influenced soils of the Santa Cruz mountains. Known occurrences along several creeks in the Program area suggest the possibility that this species may occur within Program work areas. However, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Satan's goldenbush (*Isocoma menziesii* var. *diabolica*)	CRPR 4.2	Cismontane woodland/oak woodland	**Present in Program Area, Unlikely to Occur in SMP Work Areas.** The species has only been documented in Santa Clara, San Benito, and Monterey Counties. It occurs in the Program area in the foothills of the Diablo Range in eastern San Jose, from Alum Rock Park north to Ed Levin County Park. Suitable habitat is present in the foothills of the Diablo Range, where oak woodland habitat occurs in the Santa Teresa Hills, the Almaden Hills, near Anderson Reservoir, and along Coyote Ridge. However, Program work activities are not projected to occur in foothill areas where this species is known to occur; rather, work activities will occur downstream within urban areas. Although some potential exists for the species to occur in suitable habitat near Program work areas, it is unlikely to occur within the work areas themselves.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Woolly-headed lessingia (*Lessingia hololeuca*)	CRPR 3	Clay and serpentinite soils in broadleaved upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland habitats at elevations of approximately 49–1,000 feet	**Present in Program Area, Absent from SMP Work Areas.** Three records exist in the Program area: one in the foothills west of Los Gatos, one in Sierra Azul Open Space Preserve, one in an area north of Gilroy. Suitable habitat elsewhere in the Program area is present on serpentine soils in the foothills of the Santa Cruz Mountains. Valley Water surveys for special-status plants conducted for prior Program activities and other purposes have not detected this species along creeks in the Program area. In addition, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Smooth lessingia (*Lessingia micradenia* var. *glabrata*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland - on serpentinite, often roadsides/mixed serpentine chaparral and oak woodland	**Present in Program Area, Absent from SMP Work Areas.** In the Program area, numerous records are present in the foothills of the Santa Cruz Mountains and the Diablo Range in the central and southern portions of Santa Clara County. Suitable habitat is present on rocky slopes and along roadsides in serpentine-derived soils throughout these areas. The species can potentially occur on serpentine substrates along creeks near Program work locations. However, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Arcuate bush-mallow (*Malacothamnus arcuatus*)	CRPR 1B.2	Chaparral and cismontane woodland from 50–1,165 feet in elevation	**Present in Program Area, Unlikely to Occur in SMP Work Areas.** Known to occur at Rancho San Antonio Open Space Preserve, and was historically present at a number of additional locations in Santa Clara County including in the Santa Cruz Mountains, along Coyote Ridge, in Palo Alto, and along Alviso Slough. The species can potentially occur in suitable habitat along Program streams in these areas; however, due to its limited distribution, the likelihood of occurrence is extremely low.
Hall's bush-mallow (*Malacothamnus hallii*)	CRPR 1B.2, VHP*	Chaparral, coastal scrub/chaparral	**Present in the Program Area, May be Present in SMP Work Areas.** Numerous records of the species exist in the Program area in the Santa Teresa Hills, along Coyote Ridge, at Calero County Park and at Tilton Ranch in Morgan Hill. Additional suitable habitat is present in the foothills of the Santa Cruz Mountains and the Diablo Range. Some potential exists for the species to occur in or near Program work sites within suitable habitat.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Woodland woollythreads (*Monolopia gracilens*)	CRPR 1B.2, VHP*	Grasslands or open areas in chaparral, coastal scrub, cismontane woodland, and North Coast coniferous forest on serpentinite	**Present in Program Area, Absent from SMP Work Areas.** Occurs in the Program area at Foothills Open Space Preserve, at Hidden Villa, at Rancho San Antonio Open Space Preserve, in the Santa Teresa Hills, along Metcalf Road, at Sierra Azul Open Space Preserve, at Almaden Quicksilver County Park, along Coyote Ridge, at Rancho San Vicente Open Space Preserve, above Anderson Lake Dam, at Coyote Valley Open Space Preserve, and at Sierra Vista Open Space Preserve. The species can potentially occur on serpentinite substrates along creeks near Program work locations. However, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Prostrate vernal pool navarretia (*Navarretia prostrata*)	CNPS 1B.2	Vernal pools, seeps, valley and foothill grassland	**Present in Program Area, Unlikely to Occur in SMP Work Areas.** Present within the Program area at San Felipe Lake, though no Program activities are projected to occur there. Unlikely to occur within Program work areas due to the species' limited distribution and a lack of suitable habitat.
Most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland, valley and foothill grassland in serpentinite/ serpentine bunchgrass grassland, mixed serpentine chaparral	**Present in Program Area, Absent from SMP Work Areas.** Occurs in the Program area at Rancho San Vicente Open Space Preserve, near Rancho Canada del Oro Open Space Preserve, along Coyote Ridge, and additional historical occurrences are present in the Santa Cruz Mountain foothills from Los Gatos to Morgan Hill. May occur in suitable habitat along Program streams in the Program area. However, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.

Common Name (*Scientific Name*)	Status [1, 2, 3]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Saline clover (*Trifolium hydrophilum*)	CRPR 1B.2	Mesic, alkaline, or saline sites in valley and foothill grassland habitat, in vernal pool habitat, or in marshes and swamps at elevations from 0–984 feet; occurs in both coastal and inland marshes (Hickman 1993)	**May be Present in Program Area, Unlikely to Occur in SMP Work Areas.** No known occurrences in the Program area, but suitable habitat may be present. The nearest documented occurrences are between Millers Canal and the Pajaro River off Highway 125, near the San Benito and Santa Clara County lines, where no Program activities are projected to occur. Suitable habitat in the Program area includes mesic-alkaline soils in pools, marshes, and swamps, as well as grasslands, such as those near Alviso and the Pajaro River. Unlikely to occur within Program work areas due to the lack of known occurrences in the Program area.

[1] Federal and State Endangered and Threatened Status Definitions:

Federal

FE Endangered under FESA

FT Threatened under FESA

State

ST Threatened under CESA

[2] CNPS List CRPRs:

1A Plants considered extinct.

1B Plants rare, threatened, or endangered in California and elsewhere.

3 Plants about which more information is needed - review list.

4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

.1—seriously endangered in California;

.2—fairly endangered in California;

.3—not very endangered in California.

[3] VHP = Species covered under the VHP; VHP* = Species proposed for coverage under the VHP Amendment

Sources: CNDDB 2024, CNPS 2024, and Calflora 2024

Table 2. Special-Status Wildlife Species with Potential to Occur in the Program Area and in SMP Work Areas

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Federal or State Endangered, Threatened, or Candidate Species			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT, VHP	Native grasslands on serpentine soils. Larval host plants are *Plantago erecta* and/or *Castilleja* sp.	**Present in Program Area, Absent from SMP Work Areas.** Occurs within the Program area in serpentine bunchgrass grasslands and serpentine rock outcrop/barrens on the east side of the Santa Clara Valley from Coyote Ridge south to Harvey Bear Ranch and on the west side of the Santa Clara Valley from the Santa Teresa Hills south to San Martin. However, Program activities will avoid serpentine habitat areas. Therefore, this species is absent from Program work areas.
Large marble butterfly (*Euchloe ausonides ausonides*)	FPE, VHP*	A variety of habitats including grasslands, open meadows, and streams. Larval host plants are in the mustard family (Brassicaceae).	**Present in the Program Area and SMP Work Areas.** May occur widely, though possibly only scarcely in many areas, as a resident in the Program area. Mustards are widespread along streams and in grasslands in the Program area and provide suitable larval host plants. This species likely occurs in grasslands and along streams throughout much of the Program area in low numbers. Occurrence along urban streams is expected to be much less frequent compared to streams located in more natural areas. This species also occurs in upland areas adjacent to tidal marshes and waters, where mustards are present.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Monarch butterfly (*Danaus plexippus*)	FC, VHP*	Larval host plants are typically milkweeds (*Asclepias* spp.); nectars on a variety of flowering plants	**Present in Program Area and SMP Work Areas.** Occurs widely as an uncommon migrant, nectaring on flowering plants. Narrow-leaf milkweed (*Asclepias fascicularis*) is present in scattered patches throughout the Program area, with more substantial patches present along West Little Llagas Creek in Morgan Hill (west of Hale Avenue) and along Llagas Creek in Gilroy (from approximately State Route 152 north to Buena Vista Avenue). However, close examination of approximately 480 clusters of milkweed plants along Coyote Creek between Anderson Dam and the Coyote Creek Golf Course area (including the Ogier Ponds) during three days in May and June 2022 detected only two monarch butterfly larvae; inspection of 100 plants along the rim of Anderson Reservoir on July 30, 2022, detected no monarch eggs, larvae, or pupae (S. Rottenborn, personal observation). Thus, although monarch butterflies breed in the Program area, they do so in low numbers, breeding much less commonly (at least along streams) than is indicated by the abundance of their host plants. Breeding occurs both in natural areas (on narrow-leaf milkweed) and in suburban areas (where monarchs have been documented breeding on milkweed, particularly nonnative tropical milkweed [*Asclepias curassavica]*, in landscaped areas). Some monarchs have recently overwintered in the Palo Alto/Mountain View area, though not in large roosting aggregations. No large wintering aggregations occur in Santa Clara County.
Crotch's bumble bee (*Bombus crotchii*)	SC, VHP*	Open grassland and scrub habitats	**Present in Program Area, May be Present in SMP Work Areas.** Concern over possible population declines and range contractions led CDFW (2019) to designate this species as a candidate for listing under CESA. However, since 2019, there have been documented occurrences of 100 individuals from nearly 20 locations in Santa Clara County (Bumble Bee Watch 2024, iNaturalist, 2024, S. Lockwood and S. Rottenborn, pers. obs.), indicating that the species is still extant and fairly widespread (albeit in low numbers in most locations) in the county. This species likely occurs in grassland and scrub habitat throughout much of the Program area in low numbers, and it may occur along streams located within or near extensive grasslands or scrub. Occurrence along urban streams is expected to be much less frequent.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Southern distinct population segment (DPS) of North American green sturgeon (*Acipenser medirostris*)	FT	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	**May be Present in Program Area as Non-spawner, Likely Absent from SMP Work Areas.** Known to occur in the San Francisco Bay, but apparently occurs in the South Bay very rarely as a non-spawning visitor and does not spawn in the South Bay. May occur in the tidal reaches of lower San Francisquito Creek, lower Permanente Creek/Mountain View Slough, lower Stevens Creek/Williamson Slough, Alviso Slough, Guadalupe Slough, Moffett Channel, Lower Calabazas Creek, lower San Tomas Aquino Creek, and/or Coyote Slough within the Program area, albeit infrequently and in low numbers, if at all. Likely occurs only irregularly and in low numbers in the Program area because of the very limited abundance of species In the vicinity and limited extent of Program activities proposed in tidal habitats.
White sturgeon (*Acipenser transmontanus*)	SC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	**Present in Program Area and SMP Work Areas**. White sturgeon occur in lower San Francisquito Creek, lower Stevens Creek/Williamson Slough, Guadalupe Slough, the Moffett Channel, lower Calabazas Creek, lower San Tomas Aquino Creek, Alviso Slough, and the tidally influenced portion of Coyote Creek in the Program Area (Otolith Geochemistry & Fish Ecology Laboratory 2021).
San Francisco Bay-Delta longfin smelt (*Spirinchus thaleichthys*)	FE, ST	Spawns and forages in low-salinity habitats in the intertidal portions of Coyote and Alviso Sloughs within the South Bay.	**Present in Program Area and SMP Work Areas.** Occurs in the South Bay year-round (Wernette 2000) and has been collected in Coyote and Alviso Sloughs from October through May (Hobbs et al. 2012, Otolith Geochemistry & Fish Ecology Laboratory 2021, 2022, 2023) as well as in the Island Ponds between Coyote Slough and Mud Slough (Hobbs, 2011). Adult longfin smelt have been observed spawning or preparing to spawn in restored salt ponds and tidal sloughs within the Program Area (Lewis et al., 2020; Barros et al. 2021; Otolith Geochemistry & Fish Ecology Laboratory, 2021, 2022, 2023). To date, longfin smelt has only been documented in intertidal areas and has not been documented in upstream habitat. May be present in the tidal reaches of other sloughs in the South Bay.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Central California Coast DPS steelhead (*Oncorhynchus mykiss*)	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Present in Program Area and SMP Work Areas.** Known to occur in the Program area in a number of streams flowing into San Francisco Bay, including the Guadalupe River, Guadalupe Creek, Alamitos Creek, Los Gatos Creek, Calero Creek, Coyote Creek, Upper Penitencia Creek, Arroyo Aguague, Los Trancos Creek, Stevens Creek, and San Francisquito Creek. Juveniles present year-round in upper reaches of streams. Likely present in all accessible reaches of these streams in the Program area during migration. Also present in the lower tidal reaches of Alviso Slough, Coyote Slough, Stevens Creek, and San Francisquito Creek, as well as in estuarine habitats of the South Bay, during migration.
South-Central California Coast DPS steelhead (Oncorhynchus mykiss)	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Present.** Known to occur in the Program area of the Pajaro River and its tributaries, including Pescadero Creek, Llagas Creek, Uvas/Carnadero Creek, Little Arthur Creek, Bodfish Creek, Tar Creek, Pacheco Creek, Cedar Creek, and South Fork Pacheco Creek (Leidy 2007, Casagrande 2010). Likely present in all accessible reaches of these streams in the Program area during migration.
California tiger salamander (*Ambystoma californiense*)	FT, ST, VHP	Breeds in seasonal and perennial pools/ponds in grasslands or open woodlands; spends most time in subterranean refugia such as small mammal burrows or deep rock crevices	**Present in Program Area and SMP Work Areas.** Historically may have occurred throughout the Program area; however, populations located along the Valley floor have been extirpated because of habitat alteration, and the species is absent from most of the Valley floor. Recent occurrences are scattered on the periphery of the Program area in the foothills of the Santa Cruz Mountains from Santa Teresa County Park to Gilroy and in the foothills of the Diablo Range from Coyote Ridge to Gilroy.
California red-legged frog (*Rana draytonii*)	FT, CSSC, VHP	Streams, freshwater pools, and ponds with emergent or overhanging vegetation	**Present in Program Area and SMP Work Areas.** This species has been extirpated from much of the Valley floor, and red-legged frogs are not expected to occur throughout most of the developed portions of the Program area, even in streams and ponds. However, red-legged frogs are known or expected to occur in a number of locations on the periphery of the Program area (i.e., in or near the upper, less developed reaches of streams in the Program area) in the foothills of the Santa Cruz Mountains from Sierra Azul Open Space Preserve south to Gilroy and in the foothills of the Diablo Range from Alum Rock Park to Gilroy.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Foothill yellow-legged frog (*Rana boylii*)	SE, FT, VHP	Partially shaded shallow perennial streams and riffles with a rocky substrate, and occasional intermittent streams and small in-stream impoundments. Occurs in a variety of habitats in coast ranges	**Present in Program Area, Absent from SMP Work Areas.** In the Program area, this species has disappeared from streams below major reservoirs. Populations of foothill yellow-legged frogs are still present on the margins of the Program area along the upper reaches of some streams above major reservoirs, including perennial and intermittent streams (H. T. Harvey & Associates, 1999c). However, this species is absent from areas where Program work will occur.
Northwestern pond turtle (*Actinemys marmorata*)	FPT, CSSC, VHP	Permanent or intermittent/seasonal water in a variety of habitats	**Present in Program Area and SMP Work Areas.** Occurs in a number of aquatic habitats in the Program area, including a number of perennial and intermittent creeks, rivers, lakes, and ponds (CNDDB, 2024; H. T. Harvey & Associates, 2012a). Breeding populations of northwestern pond turtles have been extirpated from many urbanized areas in the region. However, individuals of this long-lived species still occur in perennial urban streams and ponds in the Program area. Occurrence is more limited in intermittent creek systems. Potentially suitable nesting habitat for northwestern pond turtles is present in grassland areas adjacent to suitable streams and ponds in the Program area.
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE, SE, SP	Freshwater marshes, ponds, and slow-moving streams along the coast	**Absent from Program Area and SMP Work Areas.** Garter snakes in the northwestern part of the Program area (i.e., in the Palo Alto/Stanford area) fall within the intergrade zone between the San Francisco garter snake and the red-sided garter snake (*Thamnophis sirtalis infernalis*) (Barry, 1994). The intergrade populations do not belong exclusively to either subspecies; thus, true San Francisco garter snakes do not occur in the Program area.
Bank swallow (*Riparia riparia*)	ST	Colonial nester on vertical banks or cliffs with fine-textured soils near water	**Present as Nonbreeder in Program Area and SMP Work Areas.** No recent breeding records from Santa Clara County. Occurs in the Program area only as a scarce migrant.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
California condor (*Gymnogyps californianus*)	FE, SE, SP	Nests in caves in steep, isolated cliffs or cavities in mature redwood trees. Forages over grasslands, open woodlands, and along coastal beaches	**Present as Nonbreeder in Program Area, Unlikely to Occur in SMP Work Areas.** Historically present in the Program area as a nonbreeder, it is currently known to occur in the Program area only as an infrequent dispersant (usually flying very high over the area). There have been several observations of birds flying high over the Diablo Range foothills, the Pacheco Creek area, and the Saratoga/Los Gatos area (Cornell Lab of Ornithology 2024), demonstrating that reintroduced individuals from Pinnacles National Monument in San Benito County occasionally range as far north as the Program area (and may do so increasingly in the future if the reintroduced population expands). However, such individuals are unlikely to occur in the low-elevation areas where Program activities will occur.
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers; feeds mostly on fish and waterfowl	**Present in Program Area and SMP Work Areas.** Numbers of bald eagles have been increasing in the Program area in recent years, and at least 10 pairs currently nest here. This species has recently nested in the Program area (i.e., below 1,000 feet in elevation) at Coyote Reservoir, Anderson Reservoir, Lexington Reservoir, Calero Reservoir, San Felipe Lake, the Ogier Ponds, Pacheco Creek, Curtner Elementary School in Milpitas, Felt Lake, and other locations. Small numbers of nonbreeding bald eagles also forage throughout the Program area, primarily at large reservoirs, during winter and migration.
Swainson's hawk (*Buteo swainsoni*)	ST, VHP*	Nests in trees surrounded by extensive marshland or agricultural foraging habitat	**Present in Program Area, May be Present in SMP Work Areas.** Two pairs of Swainson's hawks have nested in Santa Clara County in recent years. Each year from 2013 to 2020, a pair of Swainson's hawks nested near Coyote Creek in northern Coyote Valley, providing the first County nesting record since the 1890s (Phillips et al., 2014). The only other modern record of nesting Swainson's hawk in Santa Clara County has been along State Route 152 southeast of Gilroy from 2020 through 2022 (Klein et al., 2022). This species' population/range expansion has been more pronounced in San Benito County to the south in comparison to Santa Clara County. Additional nesting pairs are expected to occur in the Program area in future years as the species' population continues to increase. This species could therefore also nest in the Program area in the future, and it could forage along Program streams. Small numbers of nonbreeding individuals forage in open habitats elsewhere in the Program area during migration.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
California Ridgway's rail (*Rallus obsoletus obsoletus*)	FE, SE, SP	Tidal salt marsh dominated by cordgrass and pickleweed; occasionally occurs in brackish marshes as well	**Present in Program Area and SMP Work Areas.** Suitable nesting habitat is present in the Program area in salt marsh habitat along the lowermost tidal reaches of creeks that flow into the San Francisco Bay (Liu et al. 2009). On very rare occasions, nonbreeding individuals wander up tidal sloughs (e.g., in tidal brackish/freshwater marsh habitats along Alviso Slough); however, all suitable breeding habitat for Ridgway's rails occurs in saline and brackish tidal marshes.
California black rail (*Laterallus jamaicensis coturniculus*)	ST, SP	Breeds in fresh, brackish, and tidal salt marsh near the edge of San Francisco Bay	**Present in Program Area and SMP Work Areas.** Until recently, black rails were known to occur in the South Bay, primarily as scarce winter visitors. However, since 2012, this species has been recorded during the breeding season in Santa Clara County tidal marshes, and nesting has been documented at Alviso Marina County Park. Broader tidal marshes along streams in the Program area may support nesting black rails. Foraging habitat for this species is also present in tidal portions of streams in the Program area, and individuals may occasionally forage in tidal habitats in the Program area year-round. An individual was also detected in freshwater marsh habitat at Rancho San Antonio in June 2023 and March 2024, but nesting has not been documented at this location.
Western snowy plover (*Charadrius nivosus nivosus*)	FT, CSSC	Sandy beaches on marine and estuarine shores and salt pannes in the San Francisco Bay saline managed ponds	**Present in Program Area, May be Present in SMP Work Areas.** Nests on levees, islands, and salt flats in some of the South Bay saline-managed ponds in the Program area. Documented nesting in Crittenden Marsh in Mountain View; in Alviso complex Ponds A3N, A6, A8S, A9, A12, A13, A15, A6, and A17; and in New Chicago Marsh and the adjacent impoundment in Alviso from 2009–2021 (San Francisco Bay Bird Observatory, 2024). Forages in these same areas and on levees and managed pond bottoms in other ponds along the Bay edge. Suitable foraging habitat is present along Program streams within the Program area, and snowy plovers may forage along these streams year-round. Individuals are not expected to nest within Program work areas; however, nesting pairs may be present in immediately adjacent ponds.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
California least tern (*Sternula antillarum browni*)	FE, SE, SP	Nests along the coast on bare or sparsely vegetated, flat substrates; in the South Bay, nests in salt pannes and on an old airport runway; forages for fish in open waters	**Present as Nonbreeder in Program Area, May be Present in SMP Work Areas.** Does not nest in the Program area; however, the South Bay is an important post-breeding staging area for least terns. Most such staging has occurred outside of (but close to) the Program area in managed ponds along the Bay in the Mountain View/Sunnyvale area (occasionally in the Alviso area). When this species is observed in the Program area vicinity, it is seen foraging in managed ponds and over the more extensive open bay. Although least terns could potentially forage on occasion along tidal portions of Program area streams, they likely do so infrequently and in low numbers.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, SE, VHP	Nests in heterogeneous riparian habitat, often dominated by cottonwoods and willows	**Unlikely to Occur in Program Area and SMP Work Areas.** The only breeding records in Santa Clara County are from Llagas Creek southeast of Gilroy in 1997 and the Pajaro River south of Gilroy in 1932. The only other confirmed records are of one or two singing males along lower Llagas Creek in May 2001 and a spring migrant in Alviso in May 2016. A singing male Bell's vireo in June 2006 along Coyote Creek near the Coyote Creek Golf Club was heard only, and hence may have been either a least Bell's vireo or a vagrant eastern Bell's vireo (*V. b. bellii*), a subspecies that has also occurred in the Program area. Although least Bell's vireos may increase in number and distribution in Santa Clara County as core populations increase, it is unlikely to be more than a rare and very locally occurring breeder along South County streams.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Tricolored blackbird (*Agelaius tricolor*)	ST, VHP	Highly colonial nester that establishes dense breeding colonies in emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, ruderal vegetation such as mustard or thistle, and occasionally in early-successional riparian habitat. Nesting colonies usually are located near fresh water. Tricolored blackbirds are itinerant nesters, and because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available.	**Present in Program Area and SMP Work Areas.** Typically nests in extensive stands of tall emergent herbaceous vegetation in freshwater marshes, ponds, and reservoirs. In the Program area, nesting colonies of this species are itinerant and patchily distributed, their distribution reflecting the patchy nature of the species' breeding habitat (Rottenborn 2007a). Tricolored blackbirds occur as uncommon nonbreeding foragers throughout most of the Program area.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, SP	Salt marsh habitat dominated by common pickleweed or alkali bulrush; recent studies have indicated that the species also utilizes brackish marshes, non-tidal managed wetlands, and some adjacent upland habitats (Smith 2019)	**Present in Program Area and SMP Work Areas.** Known to occur in the Program area in saline and brackish marshes, particularly those dominated by pickleweed or dense mature tri-corner bulrush around the Bay edge, including both fully tidal and diked/muted tidal marshes (H. T. Harvey & Associates, 2016). Individuals may occur in SMP work areas where suitable habitat is present, especially where this habitat is connected to extensive tidal marshes.
Mountain lion, Central Coast ESU (*Puma concolor*)	SC, VHP*	Has a large home range size and occurs in a variety of habitats. Natal dens are typically located in remote, rugged terrain far from human activity. May occasionally occur in areas near human development, especially during dispersal.	**Present in Program Area and SMP Work Areas.** Within the Program area, there are verified sightings reported on the Bay Area Puma Project (2024) and numerous unpublished reports. Occurs widely, though at low densities, throughout the Santa Cruz Mountains and Diablo Range and may disperse into lowland/Valley floor areas. Mountain lions are not expected to occur within urbanized portions of the Program area due to high levels of human activity, except as rare dispersants along the peripheries of developed areas. Open lands on the periphery of the Program area provide suitable foraging and dispersal habitat for this species, and individuals likely occur in these areas periodically and in low numbers. However, mountain lions are not expected to den or breed along or near Program area channels due to human disturbance.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, ST, VHP	Flat or gently sloping grasslands, mostly on the margins of the San Joaquin Valley and adjacent valleys	**May be Present in Program Area and SMP Work Areas.** May occur only in the southeastern portion of the Program area, in the vicinity of Pacheco Creek and the uppermost reaches of the Pajaro River. If it occurs here at all, it is likely to occur in low numbers and, infrequently, during dispersal between areas of known breeding activity outside the Program area.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
California Species of Special Concern			
Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*)	CSSC	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	**Present in Program Area and SMP Work Areas.** Has been observed in Program area streams since the mid-1980s (Leidy et al., 2003), and is known to occur in the Program area in the Guadalupe River, Guadalupe Creek, Alamitos Creek, Calero Creek, Los Gatos Creek, and Coyote Creek, in very small numbers (Leidy et al., 2003; Valley Water unpublished data; Valley Water and Stillwater Sciences, 2017). Uses the lower reaches of Coyote Creek and Alviso Slough as migration corridors between estuarine habitats and upstream spawning and rearing habitats. However, genetic analysis suggests that Chinook currently occurring in South Bay streams are all derived from hatchery stock (Garcia-Rossi and Hedgecock 2002, Valley Water 2018). Because the hatchery fish are released into San Francisco Bay and the Pacific Ocean as juveniles, they lack a strong homing instinct, which leads them to be more likely to stray to various river systems in the San Francisco Bay such as Coyote Creek and the Guadalupe River watersheds. Conditions for successful spawning in the Program area are marginal because these fish spawn during fall when streamflow is at its lowest; however, successful spawning has been observed in Coyote Creek and the Guadalupe River (Valley Water 2018). Despite occasional occurrences and successful spawning, there is no evidence that Chinook salmon have become naturalized in the Program area.
Pacific lamprey (*Entosphenus tridentata*)	CSSC	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats. Spawns in gravel-bottomed streams or rivers upstream of riffle habitat. Adults forage in marine areas.	**Present in Program Area and SMP Work Areas.** Historically, this species may have been present in streams throughout the Program area. It is currently known to occur in the Guadalupe River, San Francisquito Creek, Lower Silver Creek, Guadalupe Creek, Alamitos Creek, Los Gatos Creek, Uvas Creeks, Coyote Creek, Upper Penitencia Creek, and Stevens Creek, and may be locally common in these areas (Leidy 2007, Valley Water fish sampling and relocation data 2002–2009, USFWS et al. 2012; Valley Water, 2020a, 2021a). The species status is poorly documented, and abundance in other streams throughout the Program area is poorly understood. Populations may be present in all accessible portions of streams in the Program area during migration between spawning areas and marine foraging habitats.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Riffle sculpin (*Cottus gulosus*)	CSSC	Permanent headwater streams with rocky or gravel substrates and adequate cover.	**Present in Program Area and SMP Work Areas.** Within the Program area, riffle sculpin occur in the Guadalupe River, Guadalupe Creek, and Los Gatos Creek (Valley Water unpublished data 2004–2017; Valley Water 2019c, 2020b, and 2021b); Upper Penitencia Creek (Valley Water 2021a); San Franscisquito Creek (Leidy 2007); the Pajaro River (Moyle et al. 2015); and Uvas Creek (Casagrande, 2010).
Sacramento hitch (*Lavinia exilicauda exilicauda*)	CSSC	Prefer warm, lowland waters, but are also known to be abundant in cool, clear streams. Spawning can occur in riffles, ponds, and reservoirs.	**Present in Program Area and SMP Work Areas**. Within the Program area, Sacramento hitch occurs in Coyote Creek and Coyote Reservoir (Leidy, 2007; Valley Water, 2020a; Valley Water, 2020c); the Guadalupe River, Los Gatos Creek, and Saratoga Creek (Leidy, 2007); Anderson Reservoir (Smith, 2013; Leidy, 2007; Stillwater Sciences, 2018); and San Fransicsquito Creek (Leidy, 2007).
Southern coastal roach (*Hesperoleucus venustus subditus*)	CSSC	Occur in a wide array of habitats and are tolerant of intermittent surface water, a range of temperatures, and low dissolved oxygen. Spawn in shallow habitats with flow and coarse substrates.	**Present in Program Area and SMP Work Areas.** Within the Program area, southern coastal roach occur in Coyote Creek and Upper Penitencia Creek (Valley Water, 2008; Smith 2020, Valley Water, 2021a, 2022); as well as in Uvas Creek, Llagas Creek, North Fork Pacheco Creek, and Arroyo Dos Picachos (Moyle et al. 2015).
Monterey hitch (*Lavinia exilicauda harengus*)	CSSC	Abundant in lowland areas with large pools or in small reservoirs.	**Present in Program Area and SMP Work Areas.** Monterey hitches occur in the Pajaro River, Uvas Creek, Llagas Creek, and Pacheco Creek in the Program area (Casagrande 2010, Moyle et al. 2015).
Santa Cruz black salamander (*Aneides niger*)	CSSC	Mixed deciduous and coniferous woodlands and coastal grasslands. Adults found under rocks, talus, and moist woody debris.	**May be Present in Program Area and SMP Work Areas.** Known to occur in the Program area vicinity in Santa Cruz mountains and foothills from northern Santa Clara County south to the Santa Teresa Hills (CNDDB, 2024). Suitable refugia for Santa Cruz black salamanders are present under rocks and moist woody debris within the Program area. Small numbers of individuals may also traverse work areas when moving between upland habitats in the vicinity, especially during rain events.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
California giant salamander (*Dicamptodon ensatus*)	CSSC	Adults found in wet forests under rocks and logs near streams. Uses cold, clear streams for breeding.	**May be Present in Program Area and SMP Work Areas.** Known to occur in the Program area vicinity in Santa Cruz mountains and foothills from northern Santa Clara County south to the Santa Teresa Hills (CNDDB 2024). Suitable stream breeding habitat for this species is present in the Program area in the foothills of the Santa Cruz Mountains, and suitable refugia are present under rocks and woody debris near wetlands. Small numbers of individuals may also traverse work areas when moving between habitats in the vicinity, especially during rain events.
Red-bellied newt (*Taricha rivularis*)	CSSC	Riparian, broadleaf, or coniferous forest in the Coast Range. Breeds in streams with moderate to fast flows.	**Absent from Program Area and SMP Work Areas.** A small population is known to occur in upper Stevens Creek County Park in Santa Clara County (CNDDB 2024). However, this population is located outside the Program area, and individuals from this population are not expected to travel to the Program area where they can potentially be affected by maintenance activities. In addition, this population is highly disjunct from the species' primary range located north of San Francisco Bay (Reilly et al., 2014, Thomson et al. 2016) and appears to be limited to a very small area in the upper Stevens Creek watershed (de Leon, 2021). Research has been unable to determine whether this population is likely a natural remnant population or the result of a past introduction (Reilly et al. 2014).
Coast horned lizard (*Phrynosoma blainvillii*)	CSSC	Open habitats with sandy, loosely textured soils, such as chaparral, coastal scrub, annual grassland, and clearings in riparian woodlands with the presence of native harvester ants (*Pogonomyrmex barbatus*)	**Present in Program Area, May be Present in SMP Work Areas.** In Santa Clara County, this species occurs primarily in arid areas in the interior of the Diablo Range, with much more limited occurrence in the Santa Cruz Mountains. Recorded in the Program area only near Calero Reservoir (CNDDB 2024). Likely restricted to a few locations on the margins of the Program area.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Redhead (*Aythya americana*)	CSSC (nesting)	Nests in marshes and at bayside pond margins	**May be Present in Program Area and SMP Work Areas.** Documented nesting in the Program area only on a few occasions, including in the 1970s and 1980s at the Palo Alto Flood Control Basin and in 2018 in Pond A16 at the Don Edwards National Wildlife Refuge (South Bay Birds List-Serve 2024). Oversummering individuals are observed in baylands areas of Santa Clara County in small numbers each year (CNDDB 2024, South Bay Birds List-Serve 2024). There is a low probability of nesting in baylands habitats within the Program area.
Least bittern (*Ixobrychus exilis*)	CSSC (nesting)	Nests and forages in freshwater marshes	**Present in Program Area, May be Present as Nonbreeder in SMP Work Areas.** Historically a very rare nonbreeding visitor to the Program area, but a pair of least bitterns was documented nesting at Calero Reservoir in 2022. Small numbers of individuals may continue to nest at Calero Reservoir or elsewhere in the Program area where suitable habitat is present (e.g., the Ogier Ponds). However, the species is unlikely to nest in areas where Program activities are projected.
Black skimmer (*Rynchops niger*)	CSSC (nesting)	Nests on abandoned levees and islands in saline managed ponds and marshes	**Present in Program Area, May be Present as Nonbreeder in SMP Work Areas.** Black skimmers are an uncommon resident that have nested in the South Bay since 1994. Within the Program area, the species has nested on islands in saline-managed ponds in the Alviso area (e.g., on ponds AB1, AB2, A1, A2W, A7, A8, and A16, and Pond A12 (Bousman, 2007a), as well as at Shoreline Lake. No suitable nesting habitat for black skimmers is present within Program work areas. Individuals forage along tidal sloughs within Program work areas, but they are not expected to occur away from tidal/bayland areas (e.g., along streams or at inland lakes and reservoirs).
Northern harrier (*Circus cyaneus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas	**Present in Program Area and SMP Work Areas.** Within the Program area, potential nesting habitat is present primarily in tidal marshes along sloughs, in diked/muted tidal salt marshes near the Bay, in fallow fields and pastures in Coyote Valley, and in fallow fields and wetlands along lower Llagas Creek, Carnadero Creek, Pacheco Creek, and the Pajaro River. The species is known to nest near Program work areas where suitable habitat is present. Nonbreeding individuals forage regularly in grassland, agricultural, and wetland habitats throughout the Program area, and can occur in high densities in some years (e.g., during vole outbreaks).

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Long-eared owl (*Asio otus*)	CSSC (nesting)	Riparian bottomlands with tall, dense willows and cottonwood stands (also dense live oak and the California Bay along upland streams); forages primarily in adjacent open areas	**Present in Program Area, May be Present in SMP Work Areas.** Rare resident and occasional winter visitor in Santa Clara County. Historical breeding records exist for the Santa Clara Valley floor, and one recent nest was recorded at Ed Levin County Park west of Calaveras Reservoir (Noble 2007). Additional individuals have been detected in Santa Clara County during the breeding season in Foothills Park and Monte Bello Open Space Preserve (Cornell Lab of Ornithology 2024). Long-eared owls could potentially breed in oak woodlands, riparian habitats, and other wooded habitats in the foothills of the Santa Cruz Mountains and the Diablo Range, though likely only in very low numbers.
Short-eared owl (*Asio flammeus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas	**May be Present in Program Area, Unlikely to Occur in SMP Work Areas.** Has been recorded nesting in the Program area only in the Palo Alto Flood Control Basin, although it has not been confirmed nesting there since the 1970s. Low probability of nesting elsewhere.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Burrowing owl (*Athene cunicularia*)	CSSC, VHP	Prefers grasslands and ruderal habitats, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting. The nesting season as recognized by the CDFW extends from February 1 through August 31. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate; young birds disperse across the landscape from 0.1 to 35 miles from their natal burrows.	**Present in Program Area, May be Present in SMP Work Areas.** Present year-round in the Program area in open, agricultural, and grassland areas where active ground squirrel burrows are present. However, this species has undergone a substantial decline in Santa Clara County. Small populations of breeding and overwintering burrowing owls continue to be present at the San Jose International Airport, in the North San Jose/Alviso area, at Moffett Federal Airfield, and at Shoreline Park in Mountain View. Individuals occur more widely in grassland and agricultural areas throughout Santa Clara County, particularly in foothills on either side of the Santa Clara Valley, during migration and winter.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Vaux's swift (*Chaetura vauxi*)	CSSC (nesting)	Nests in snags in coastal coniferous forests or, occasionally, in chimneys; forages aerially	**Present in Program Area, May be Present in SMP Work Areas.** In the South Bay, nests primarily in snags in forests of the Santa Cruz Mountains but will also nest in residential chimneys in the Santa Cruz Mountain foothills from northern Santa Clara County south to Calero County Park (Rottenborn 2007b). Swifts have been observed foraging widely over various habitats, but most commonly in suburban areas with chimneys suitable for nesting, such as Los Gatos, Los Altos, Los Altos Hills, Cupertino, and Campbell. Thus, this species likely breeds more commonly than is currently recorded (though still in small numbers) in residential areas in the northwestern part of the Program area. Forage aerially over these areas during the breeding season and anywhere over the larger Program area during migration.
Purple martin (*Progne subis*)	CSSC (nesting)	Nest in abandoned woodpecker holes. Forages aerially for insects.	**Present as Nonbreeder in Program Area, and SMP Work Areas.** Purple martins occur as scarce migrants throughout the Program area and as rare and local breeders along the ridgeline of the Santa Cruz Mountains (Sequoia Audubon Society 2001; Rana Creek Habitat Restoration, 2002; Cornell Lab of Ornithology, 2024). Known summering and nesting locations include the southern edge of Sierra Azul Open Space Preserve along Loma Prieta Road (Cornell Lab of Ornithology 2024). Nesting individuals from the Santa Cruz Mountains are known to forage at lower elevations, such as at Calero Reservoir (Cornell Lab of Ornithology 2024). The species is not known to nest in the Program area, but nesting could possibly occur in forested areas below 1,000 feet elevation.
Olive-sided flycatcher (*Contopus cooperi*)	CSSC (nesting)	Breeds in mature forests with open canopies, along forest edges in more densely vegetated areas, in recently burned forest habitats, and in selectively harvested landscapes	**May be Present in Program Area and SMP Work Areas.** Common summer resident in western Santa Clara County (Bousman 2007b). This species breeds widely in the Santa Cruz Mountains and more sparingly in the Diablo Range, but does not breed on the Santa Clara Valley floor. Few pairs nest at sites below 1,000 feet elevation, but confirmed breeding has occurred at elevations as low as 400 feet (Bousman, 2007b).

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats	**Present in Program Area, May be Present in SMP Work Areas.** This species' population in Santa Clara County has declined in recent years. Loggerhead shrikes are currently known to nest regularly, only in small numbers, in the southern part of the Program area (Cornell Lab of Ornithology, 2024). Occasional individuals are also periodically observed during the nesting season in open habitats of northern Santa Clara County along San Francisco Bay and in the Coyote Valley and Morgan Hill areas, and small numbers may still breed in those areas. It occurs slightly more widely (i.e., in smaller patches of open areas providing foraging habitat) during the nonbreeding season.
Yellow warbler (*Setophaga petechia*)	CSSC (nesting)	Nests in riparian woodlands	**Present in Program Area and SMP Work Areas.** Uncommon breeder in wooded riparian habitats in the Program area. Prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007c), particularly in areas with more open space adjacent to the riparian habitat (rather than in heavily developed areas). The species is an abundant migrant throughout the Program area during the spring and fall.
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains	**Present in Program Area and SMP Work Areas.** Yellowthroats nesting from the northern San Jose/Milpitas/Santa Clara/Los Gatos area northward, both along the edge of the Bay and in riparian and wetland habitats inland, are likely of the special-status *sinuosa* subspecies, whereas those in areas farther south are likely of the more widespread *arizela* subspecies. The greatest proportion of breeding records of *sinuosa* in the Program area are from brackish and freshwater marshes near the edge of the Bay, and early successional riparian habitat in broader floodplains along lower Coyote Creek and the Guadalupe River (Bousman 2007d). Nests typically located in extensive stands of bulrushes in brackish marshes and dense cattail beds in freshwater marsh habitats, but are also found in forbs in riparian habitats.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Yellow-breasted chat (*Icteria virens*)	CSSC (nesting)	Nests in dense stands of willow and other riparian habitat	**May be Present in Program Area and SMP Work Areas.** Rare breeder, and only slightly more regular transient, in willow-dominated riparian habitats in the Program area. Historically, it likely bred more widely in Santa Clara County, but it is now rare because of the loss of suitable breeding habitat and brood parasitism in brown-headed cowbirds. In the Program area, the species is most numerous and occurs most regularly on lower Llagas Creek, but it has been recorded along Coyote Creek in the vicinity of Hellyer Park upstream, and it likely occurs in low numbers on other streams south of the more urbanized San Jose area. The species occurs as a very scarce migrant throughout the Program area during the spring and fall.
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels	**Present in Program Area and SMP Work Areas.** Endemic to Central and South San Francisco Bay. In the Program area, this species occurs in the taller vegetation found along tidal sloughs, including salt marsh cordgrass and marsh gumplant, near the South Bay. The approximate location of the interface between populations of the Alameda song sparrow and those of the race breeding in freshwater riparian habitats (*gouldii*) in Santa Clara County.
Grasshopper sparrow (*Ammodramus savannarum*)	CSSC (nesting)	Breeds and forages in grasslands, meadows, fallow fields, and pastures	**Present in Program Area, May be Present Adjacent to SMP Work Areas.** Nests in extensive grasslands with some heterogeneity, including serpentine grasslands. In the Program area, breeding birds occur in the foothills of the Santa Cruz Mountains and from Calaveras Reservoir southeast to the hills above Pacheco Creek (Heller 2007). Breeding birds also occur in the southeast portion of the Program area, where the hills drop down to the Pajaro River Valley (Heller 2007). Within these areas, nesting individuals may be present where extensive grasslands are located adjacent to Program area channels. This species occurs in low numbers in grasslands throughout the Program area during migration and winter (Cornell Lab of Ornithology, 2024).
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	CSSC	Nests in pickleweed dominated salt marsh and adjacent ruderal habitat	**Present in Program Area and SMP Work Areas.** Breeds in the Program area are primarily found in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat and in adjacent ruderal habitat in South San Francisco Bay (Rottenborn, 2007c). Breeding has also been confirmed in expanses of short grassland in inland/non-instream areas on the west side of the Coyote Valley and in the Santa Cruz Mountain foothills just north of the Pajaro River Valley (Rottenborn 2007c). During the nonbreeding season, *alaudinus* and other Savannah sparrow subspecies may forage in open areas throughout the Program area.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	CSSC	Medium-high marsh 6 to 8 feet above sea level with abundant driftwood and common pickleweed	**Present in the Program Area, May be Present in SMP Work Areas.** Formerly more widely distributed in the Bay Area. This small insectivorous mammal is now confined to salt marshes of the South Bay (Findley, 1955). Salt marsh wandering shrews occur most often in medium-high wet tidal marsh (6 to 8 feet above sea level), with abundant driftwood and other debris for cover (Shellhammer 2000). They have also been recorded occasionally in diked marsh. This species is typically found in fairly tall pickleweed, in which these shrews build nests. Individuals may occur in Program work areas where suitable habitat is present, especially where this habitat is connected to extensive tidal marshes.
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees	**Present in Program Area, May be Present in SMP Work Areas.** Historically, may be present in a number of locations throughout the Program area, but this species has declined in recent decades. Known maternity colonies in the Program area occur at several locations. Suitable roosting sites are present in a number of other locations, particularly in or near open space or less developed areas around the periphery of the Program area, and the species may be more widespread than is known. Individuals can potentially forage in the Program area in open areas located within several miles of colonies.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats	**May be Present as Nonbreeder in Program Area and SMP Work Areas.** No known extant populations are present on the Santa Clara Valley floor, and no breeding sites are known from the Program area. Occasional individual Townsend's big-eared bats may roost and forage in suitable habitats nearly anywhere in the Program area, but such individuals are expected to occur very infrequently and in small numbers. Roosting colonies are known from the UTC property east of Coyote Ridge, near Metcalf Road, and at Almaden-Quicksilver County Park. Although both locations are outside the Program work areas, these records indicate the potential for this species to occur in suitable habitat in the Program area, possibly near southern Coyote Ridge and northern Anderson Reservoir or in the Guadalupe Mines area. Individuals are occasionally recorded roosting on the Santa Clara Valley floor, such as in Coyote Valley, Morgan Hill, and near Calero Reservoir.
Western red bat (*Lasiurus blossevillii*)	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat	**May be Present as Nonbreeder in Program Area and SMP Work Areas.** Individual western red bats occurs in the Program area vicinity in low numbers as migrants and winter residents, but this species does not breed in the South Bay. Individual western red bats may roost in the foliage of trees virtually anywhere in the Program area, but they are expected to roost primarily in riparian areas.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub	**Present in Program Area and SMP Work Areas.** This species is locally common on the Santa Clara Valley floor throughout the Program area where suitable habitat is present, including within some urban areas. Occurs more regularly along less urbanized reaches of a number of streams, as well as in rural and natural areas on the Valley floor and in the foothills of the Santa Cruz Mountains and the Diablo Range (H.T. Harvey and Associates 2010b).
American badger (Taxidea taxus)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas	**Present in Program Area and SMP Work Areas.** Known to occur in the Program area primarily in grasslands and less frequently disturbed agricultural habitats, mostly in the foothills but sometimes on the Valley floor. The majority of occurrences in the Program area are from the Coyote Valley area and northern Morgan Hill (CNDDB 2024). An individual was also observed by Valley Water staff at Slopeview Reservoir in eastern San Jose in 2021. Not expected to establish dens within or immediately adjacent to the Program area due to high levels of human disturbance.
State Fully Protected Species			
Golden eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas	**Present in Program Area, May be Present in SMP Work Areas.** Breeds widely in the Diablo Range and less commonly in the Santa Cruz Mountains, mostly above the elevation of the Program area, but a few pairs breed at the edges of the Santa Clara Valley at elevations within the Program area (Bousman 2007e). A pair of eagles has also nested in recent years in buffer lands of the San Jose-Santa Clara Regional Wastewater Facility in the Program area. Forages somewhat more widely, especially during the nonbreeding season, in agricultural/open space areas on the Valley floor, such as in the Alviso area, in Coyote Valley, and in the Pajaro River watershed. Unlikely to nest in or be very close to Program work areas.

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas
White-tailed kite (*Elanus leucurus*)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats	**Present in Program Area and SMP Work Areas.** Nests in northern Santa Clara County are in the foothills of Santa Cruz Mountains, along the edges of the San Francisco Bay from Palo Alto to Milpitas, and in the foothills of the Diablo Range east of Milpitas (Mammoser 2007). Also a fairly common breeder along Llagas and Uvas/Carnadero Creeks and the Pajaro River in southern Santa Clara County. Individuals also nest at scattered locations in the foothills of the Santa Cruz Mountains and the Diablo Range on either side of the urbanized Valley floor, and occasionally in urban areas on the periphery of open foraging habitats. Occurs as a common forager in open habitats throughout the Program area during the nonbreeding season.
Ringtail (*Bassariscus astutus*)	SP	Cavities in rock outcrops and talus slopes, as well as hollows in trees, logs, and snags that occur in riparian habitats and dense woodlands, are usually in close proximity to water	**May be Present in Program Area and SMP Work Areas.** Ostensibly suitable habitat is present in forested areas at the upper margins of the Program area, but few confirmed records exist. The species has been observed along Summit Road and near Highway 152 just west of Gilroy along Redwood Retreat Road, and it may be present in other areas removed from urbanization. However, given the very low numbers of detections, this species is likely very scarce and localized in occurrence in the Program area, and it is likely absent from most Program work areas, such as valley-floor streams close to urban, suburban, or agricultural activity.
Other Special-Status Species			
Pacific harbor seal (*Phoca vitulina richardsi*)	MMPA	Found throughout the northern Atlantic and Pacific Oceans along coastal waters, river mouths, and bays	**May be Present in Program Area and SMP Work Areas.** Permanent residents of San Francisco Bay, where a primary haul-out site is located at Mowry Slough northeast of the Program area. Suitable haul-out sites for harbor seals are present in the Program area in the tidal reaches of sloughs in the South Bay, and use of haul-out sites varies over time. No pupping sites are currently known within the Program area, although potentially suitable pupping habitat is present.

[1] Federal, State, and Local Status Definitions:

Federal

FE	Endangered under the Federal Endangered Species Act (FESA)
FT	Threatened under FESA
FPE	Proposed for listing as endangered under FESA
FPT	Proposed for listing as threatened under FESA

Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area and SMP Work Areas

FC Candidate for listing under FESA
MMPA Species Protected under the Marine Mammal Protection Act
State
SE Endangered under the California Endangered Species Act (CESA)
ST Threatened under CESA
SC Candidate for Listing under CESA
SP State Protected
CSSC California Species of Special Concern
Local
VHP Covered under the Santa Clara Valley Habitat Plan (VHP)
VHP* Expected to be covered under a future VHP amendment

Source: Data compiled from sources cited in individual rows in the table above by H.T. Harvey & Associates in 2023

ATTACHMENT D

Bank Stabilization Methods

ATTACHMENT D
Bank Stabilization Methods

INTRODUCTION

Attachment D includes the range of methods available for conducting stream bank stabilization in the Stream Maintenance Program.

For each method, a stream flow velocity that is included. However, stream velocities will vary with the type of vegetation, the maturity of the vegetation, and the channel type. Bank stabilization projects in unmodified channels and modified channels with ecological value are designed in consideration of both impact avoidance and acceptable risk of flooding and damage to Valley Water facilities. The factors and rationale supporting Valley Water's determination of "acceptable risk" will be included in the NPW.

Slopes and velocities identified herein are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

For all methods that include a revegetation or planting component, the following planting guidelines apply:

The plant palette will be based on an evaluation of the vegetation communities up- and down-stream of the erosion site, and the local soil, moisture, and hydraulic conditions. The species' relative erosion control effectiveness will also be considered. Plants utilized in the restored project area will consist of native herbaceous, shrub and/or tree species, or a mixture of these species selected from the SMP plant palette provided in Table 10-5 of the Program Manual. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows:

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center

For any tree removals or other associated vegetation impacts with the project, mitigation will be accounted for separately.

Attachment D applies to on-site[1] mitigation associated with bank stabilization activities authorized under the SMP. Off-site mitigation (i.e., mitigation outside the footprint of the authorized bank stabilization structure) requires submittal of compensatory mitigation plans to the permitting agencies (see Chapter 10 and SMP permits). Off-site compensatory mitigation plans must be approved in writing by the agencies, and must be implemented prior to or concurrent with the bank stabilization impacts for which off-site mitigation is being provided.

For off-site mitigation sites located within the mapped SMP coverage area, the compensatory mitigation plans must include a map showing the location of the mitigation site, an SMP mitigation site identification number, a planting plan diagram (to scale), planting specifications, and the date the plantings are to be installed. For off-site mitigation sites outside of the mapped SMP coverage area, the compensatory mitigation plans must be prepared in accordance with the USACE mitigation plan requirements for general permits (33 CFR 332.4[c]) and the most current version of the USACE San Francisco District's Mitigation and Monitoring Proposal Guidelines.

[1] For the purposes of this document, on-site is within the project disturbance area. Off-site is outside of the project disturbance area.

#1: EARTH REPAIR

DESCRIPTION

Earth repair involves the replacement and repair of eroded channel banks using compacted soil. The eroded slope is scarified and readied for fill placement. A three-foot deep key is cut into the invert. Fill is placed and compacted 80% to 90% in 8-inch lifts. The new slope is trimmed to a 2:1 slope. The surface is seeded with fast sprouting native grass species. Geotextile/erosion control fabric is placed over hydroseeding to secure newly compacted bank, where needed per site velocity and bank slope.

The fill material needs to be appropriate to this purpose. There should be no deleterious or organic material or other debris contained in the fill. The Atterberg Plasticity Index of the material should be between 15 and 25, with the Liquid Limit no higher than 40. The material must contain at least 20% clay (by weight) passing U.S. standard sieve number 200.

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

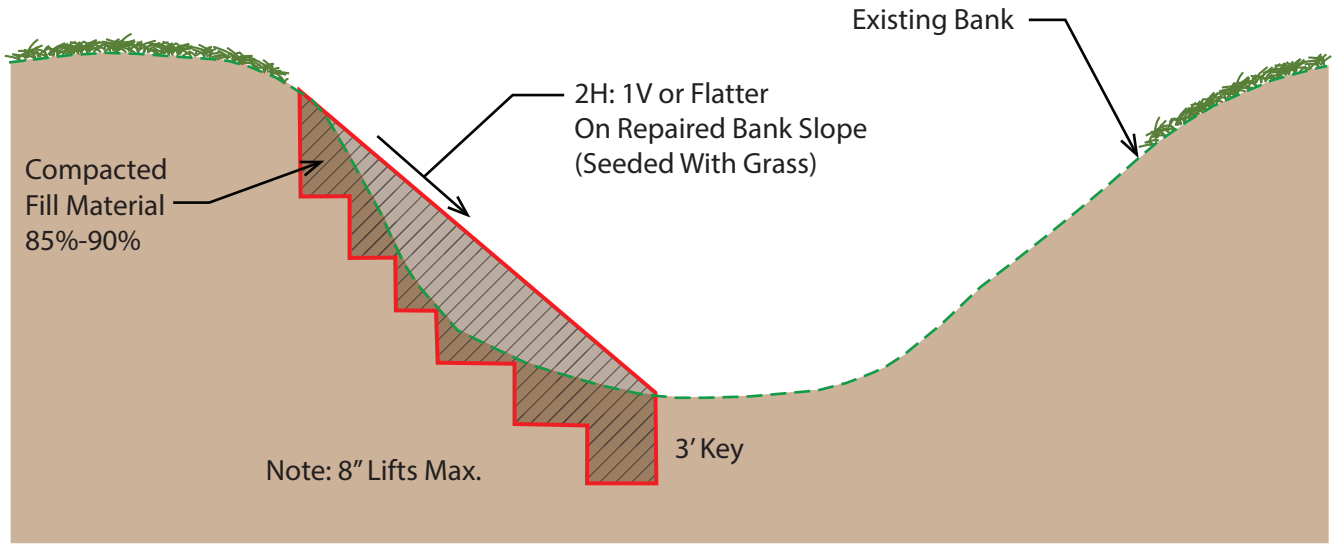
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. Site shall be hydroseeded or hand-seeded as conditions require. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Provides limited biotic resources
Bank:	Provides limited biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits.

This repair method includes revegetation of the repair area using native grass and herbaceous species. This repair method will only be used on grass-lined channels where grass is the predominant vegetation, and that contain no significant (i.e., more than scattered, isolated trees and shrubs) riparian vegetation. Consequently, no additional mitigation is required. If trees and shrubs are removed as part of the bank repair, they will be replaced pursuant to the requirements set forth in Chapter 10.



SECTION

Source: Updated by Montrose, 2023

#1: EARTH REPAIR



Before—Quimby Creek u/s White



After—Quimby Creek u/s White

#1A: EARTH REPAIR WITH BURIED ROCK

DESCRIPTION

Earth repair with buried rock protects against erosion scour and stabilizes excavated or steep channel embankments. The buried rock (rock buttress) contributes to slope stability and prevents embankment failure (e.g., slumps, slides, sags). The rock structure will guard against bank scour, loss of adjacent property, protect infrastructure, and arrest future erosion, thereby reducing the loss of riparian vegetation during high flow events. The rock buttress is buried and compacted earth is placed over the top to provide an area for revegetation. No hardscape features are visible above-ground upon completion of this method.

The buried rock typically requires a cutoff wall to prevent undermining. The cutoff wall is an excavated trench with revetment, rock, or boulders placed inside. The rock buttress is composed of rock revetment or boulders placed and stacked in such a manner as to construct a gravity retaining wall. The buttress height is limited and may be installed on cut benches in the embankment for purposes of stability. Earth is placed in successive lifts adjacent to the base of the rock buttress and over the tops of the boulders. Once the earth has been placed, the overbuilt embankment is cut and trimmed back to match the upstream and downstream channel side slopes and toes.

DESIGN CRITERIA

Appropriate on bank slopes of 1.5:1 or flatter.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

Soil cover over boulders must be a minimum of one and a half feet.

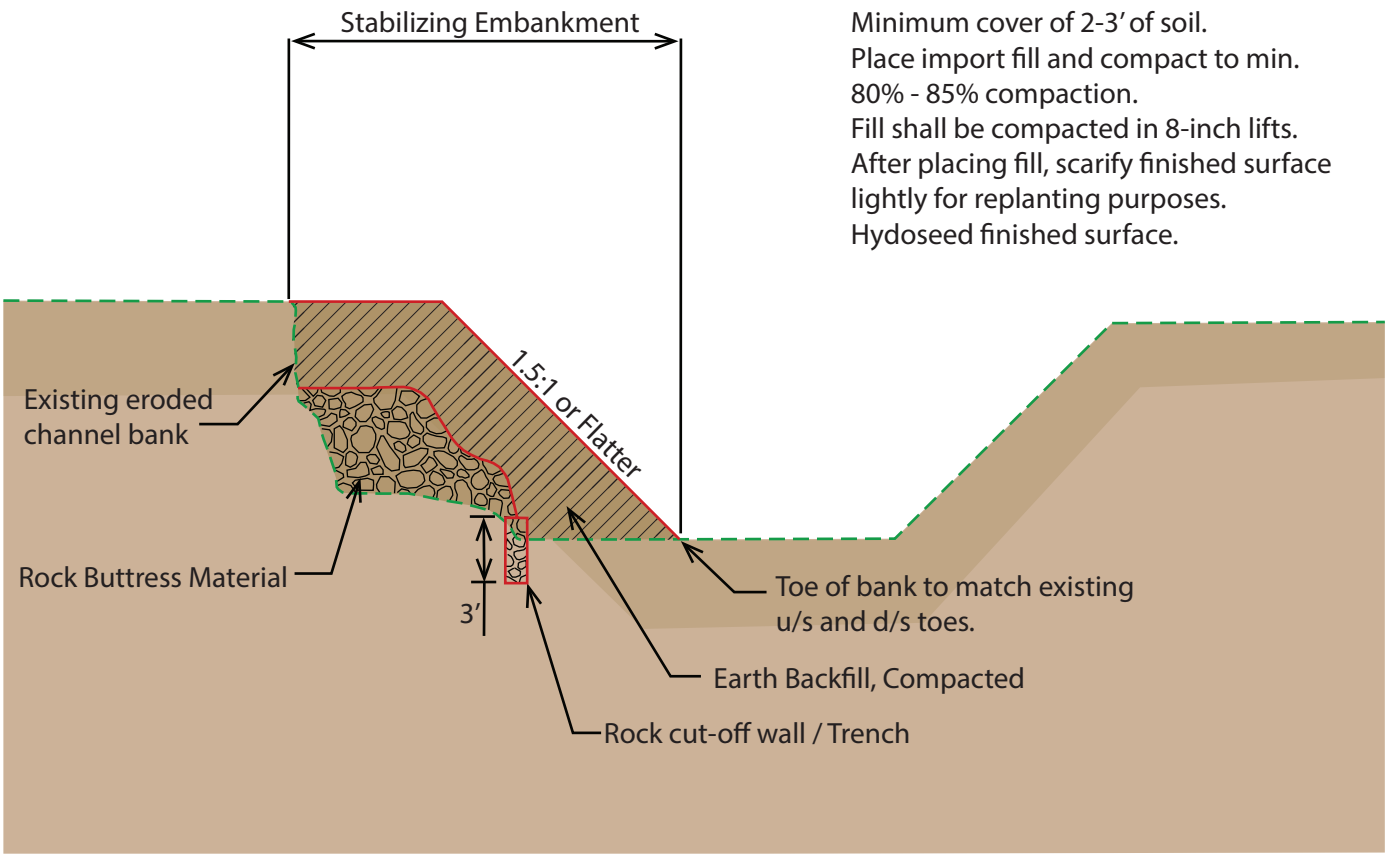
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. This repair method includes revegetation of buried revetment. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.



SECTION

Source: Updated by Montrose, 2023

#1B1: EARTH REPAIR WITH BOULDER BASE VEGETATED

DESCRIPTION

Earth repair with rock base is used to protect against erosion scour and stabilizes steep embankments. This method is typically applied to small “flashy” channels in order to stabilize and prevent embankment failure. Due to the high erosive stresses on the channel embankments during storm events, the rock base will be sized appropriately to the localized hydraulic conditions to protect against bank scour, and loss of embankment material above the rock base. Compacted earth (80% to 90% relative compaction) is placed over the rock base to provide a uniform slope transition from the rock base to the top of bank.

The final earth repair slope will be consistent with the design criteria. At the upstream and downstream limits of the restored creek bank, the transitions zones will provide a bank slope similar to the adjacent channel conditions. Erosion control for the new earth slope will include the installation of seeding with fast sprouting native grass species, or applying geotextile/erosion control fabric over hydroseeding to secure the newly compacted bank.

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for earth repair section. 1.5:1 or flatter for boulder section.

Boulders must be keyed in (minimum 3 feet deep) at the base of the bank. Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

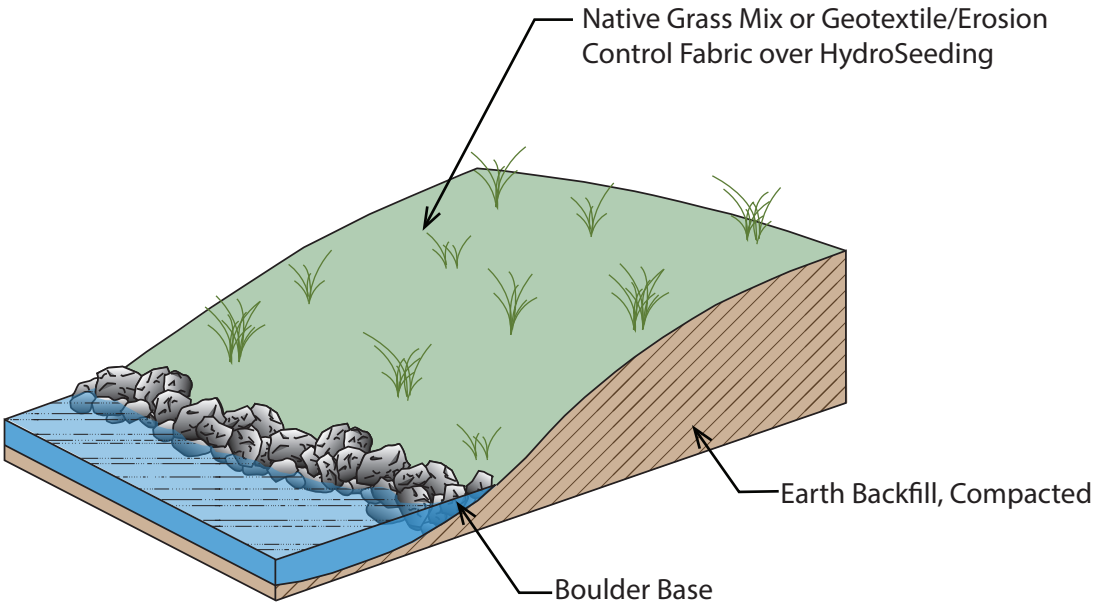
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

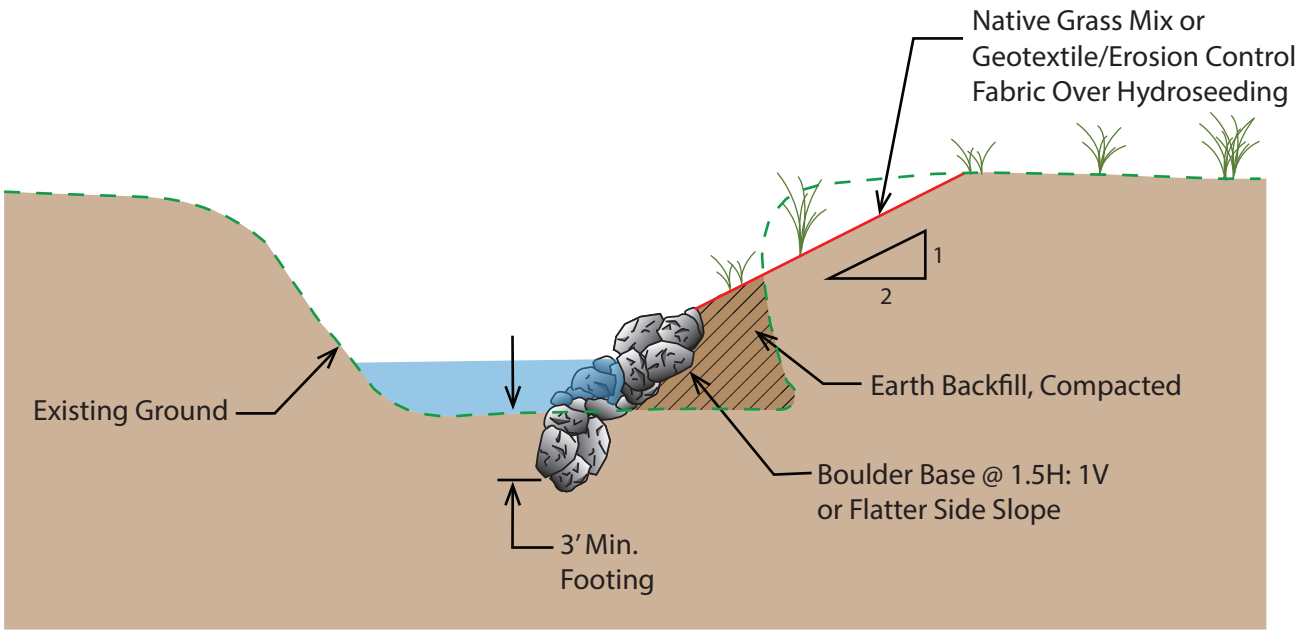
Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.





SECTION

Source: Revised by Montrose, 2023

#1B1: EARTH REPAIR WITH BOULDER BASE



Before—Canoas Creek u/s Hillsdale



After—Canoas Creek u/s Hillsdale

#1B2: EARTH REPAIR WITH BOULDER BASE NOT VEGETATED

DESCRIPTION

Earth repair with vegetated rock base is used to protect against erosion scour and stabilizes steep embankments. This method is typically applied to small “flashy” channels in order to stabilize and prevent embankment failure. Due to the high erosive stresses on the channel embankments during storm events, the rock base will be sized appropriately to the localized hydraulic conditions to protect against bank scour, and loss of embankment material above the rock base. Compacted earth (80% to 90% relative compaction) is placed over the rock base to provide a uniform slope transition from the rock base to the top of bank.

The final earth repair slope will be consistent with the design criteria. At the upstream and downstream limits of the restored creek bank, the transitions zones will provide a bank slope similar to the adjacent channel conditions. Erosion control for the new earth slope will include the installation of seeding with fast sprouting native grass species, or applying geotextile/erosion control fabric over hydroseeding to secure the newly compacted bank.

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for earth repair section. 1.5:1 or flatter for boulder section.

Boulders must be keyed in (minimum 3 feet deep) at the base of the bank.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

#2: LIVE CONSTRUCTION

DESCRIPTION

Live construction consists of traditional methods of grading slopes and planting live grasses and other plants to control erosion and to restore habitat. Vegetation planting methods commonly used include cuttings, transplants, live staking, and direct seeding (including hydro-seeding).

Biodegradable erosion control materials will be used where necessary in conjunction with live construction to assist in plant establishment.

Excellent revegetation potential. Most successful in stream banks where moderate erosion and channel migration are anticipated. Bank slope, eroding velocity, and reinforcement at the toe of the bank are limiting factors. Enhances conditions for colonization of native species. Stream bank soil materials, probable groundwater fluctuation, and bank loading conditions are factors for determining appropriate design.

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

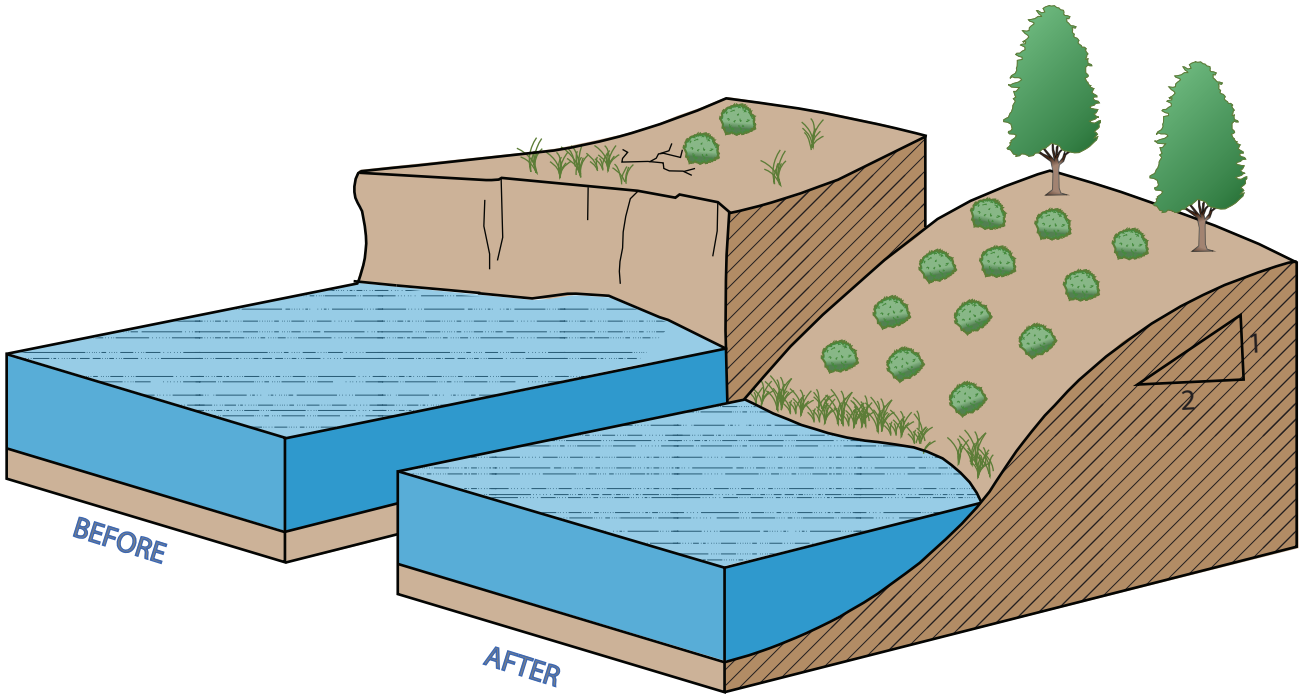
Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center

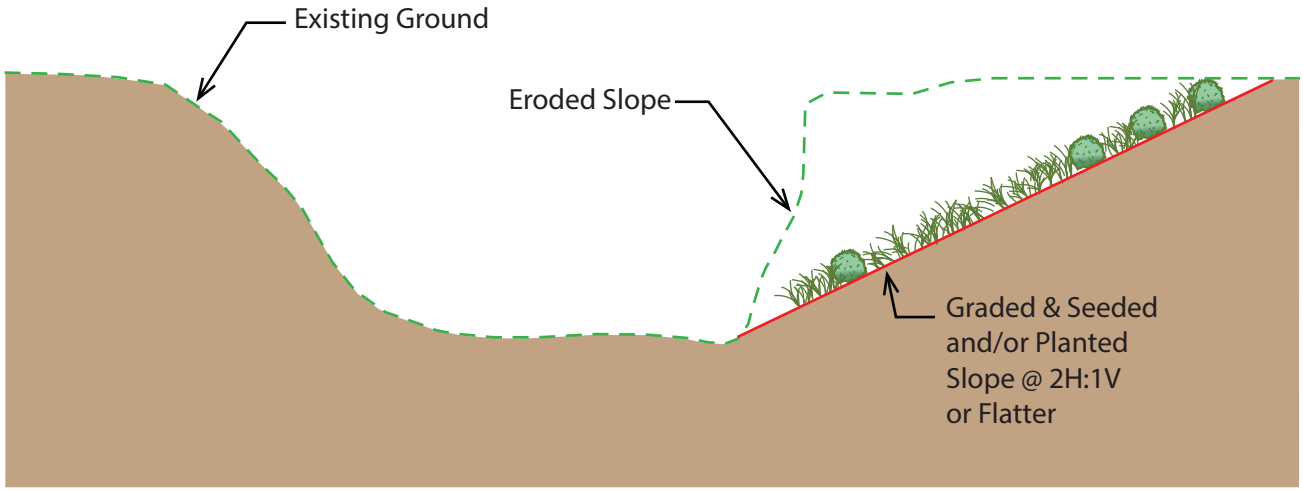
HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

Source: Adapted from Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; Updated by Montrose, 2023

#2A: LIVE CONSTRUCTION WITH BOULDER BASE

DESCRIPTION

Live construction consists of traditional methods of grading a flatter slope and planting live grasses and other plants to control erosion. Vegetation planting methods commonly used include cuttings, transplants, live staking, and direct seeding (including hydro-seeding). Biodegradable erosion control materials are used where necessary in conjunction with live construction to assist in plant establishment.

Appropriately-sized boulders are placed along the base of the rebuilt bank up to the elevation indicated by the hydraulic analysis and ecological site conditions. Voids in between the boulders can be planted using live stakes.

Excellent revegetation potential. Enhances conditions for colonization of native species. Streambank soil materials, probable groundwater fluctuation, and bank loading conditions are factors for determining appropriate design.

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for live construction section. 1.5:1 or flatter for boulder section.

Boulders must be keyed in (minimum 3 feet deep) at the base of the bank.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

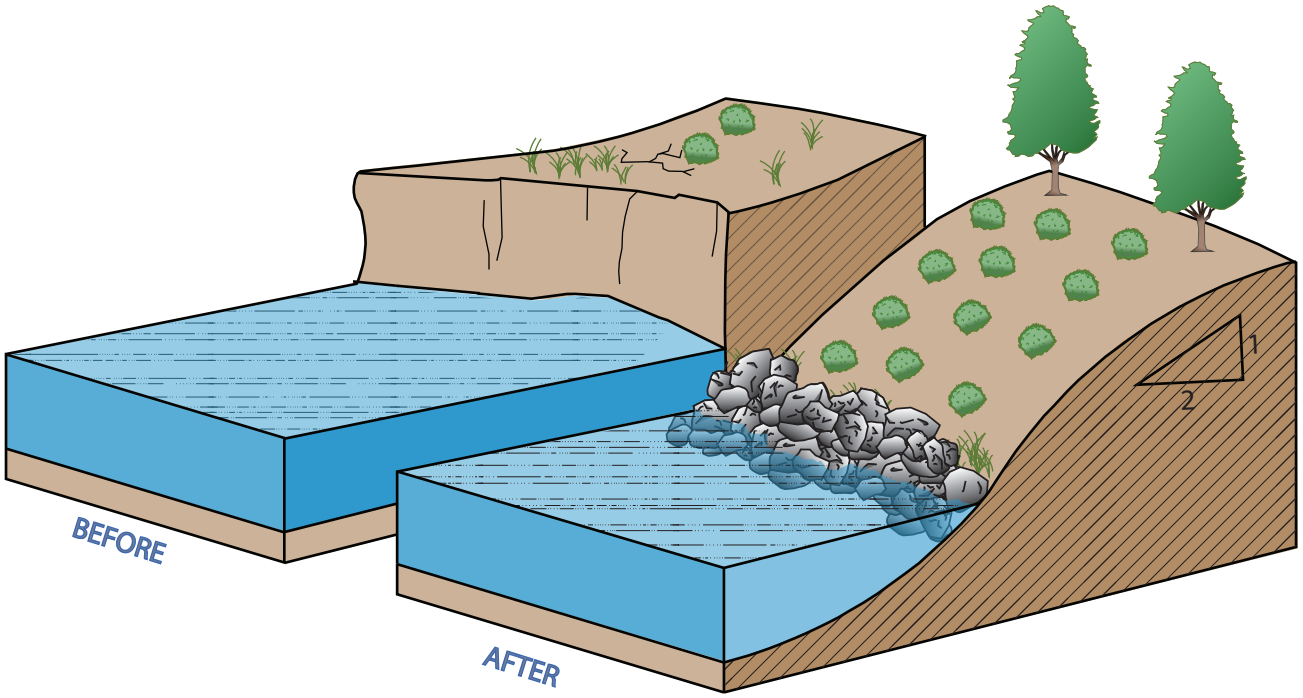
Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

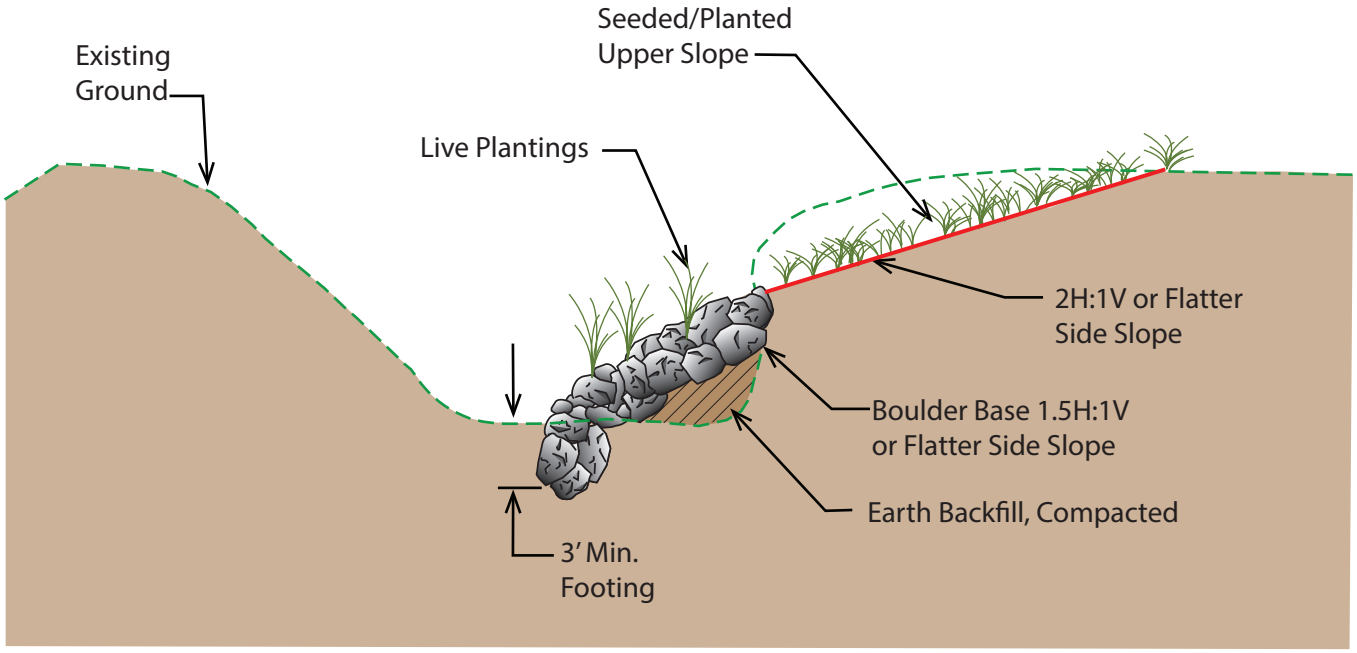
HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

Source: Adapted from Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; updated by Montrose, 2023

MONTROSE ENVIRONMENTAL

#2A: Live Construction with Boulder Base
Bank Stabilization Methods

#2A: LIVE CONSTRUCTION WITH BOULDER BASE



Before—Canoas Creek u/s Hillsdale



After—Canoas Creek u/s Hillsdale

#2B: LIVE CONSTRUCTION WITH LOG BASE

DESCRIPTION

Live construction consists of traditional methods of grading a flatter slope and planting native vegetation to control erosion. Biodegradable erosion control materials are used where necessary in conjunction with live construction to assist in plant establishment[2].

Logs are anchored to the bed and/or native bank up to ordinary high water mark or the elevation indicated by the hydraulic analysis. Determine scour depth, log size (typically between 6 inches to 24 inches in diameter), and anchor system based on specific site conditions. Root wads may also be used where applicable and/or available.

This repair method is used to protect the toe line from erosion. It is especially useful for long straight channel reaches. The logs provide immediate protection from erosion while live branch cuttings contribute long-term durability and ultimately replace the decaying logs[3].

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for live construction section. 1.5:1 or flatter for the log base section.

Install the log base with anchors.

Appropriate for local stream velocities of 15 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as log placement allows

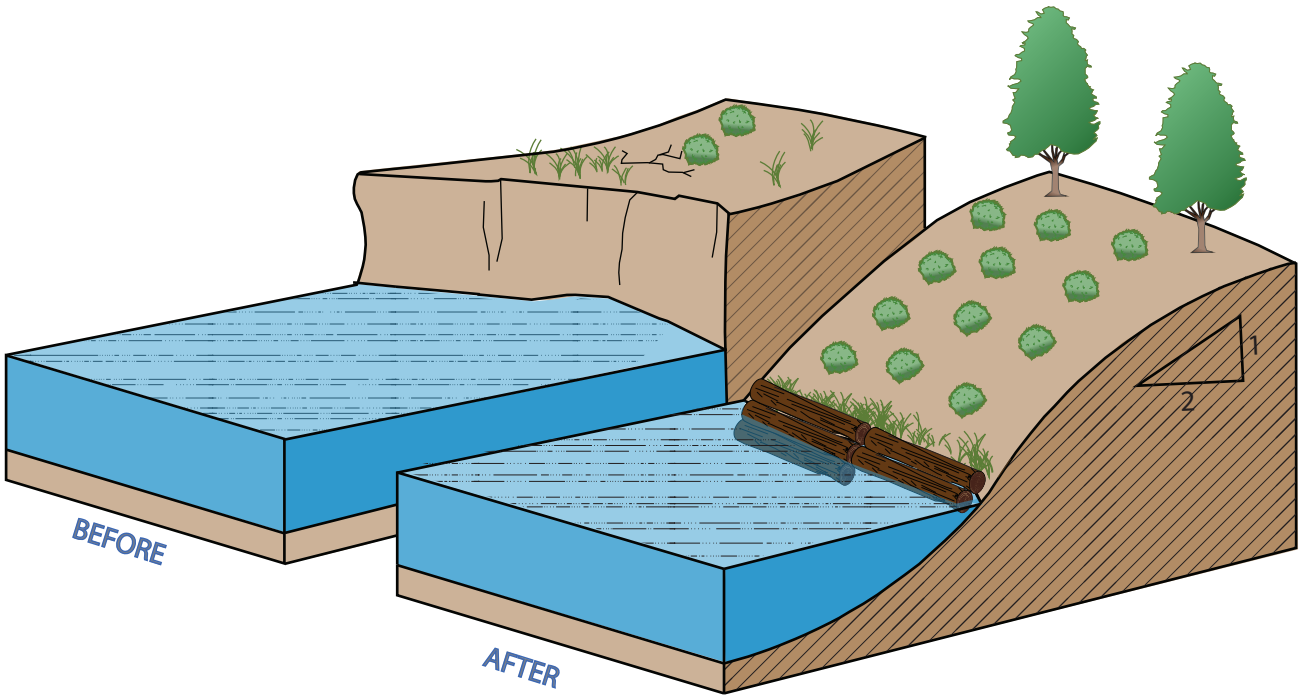
HABITAT IMPACT ASSESSMENT

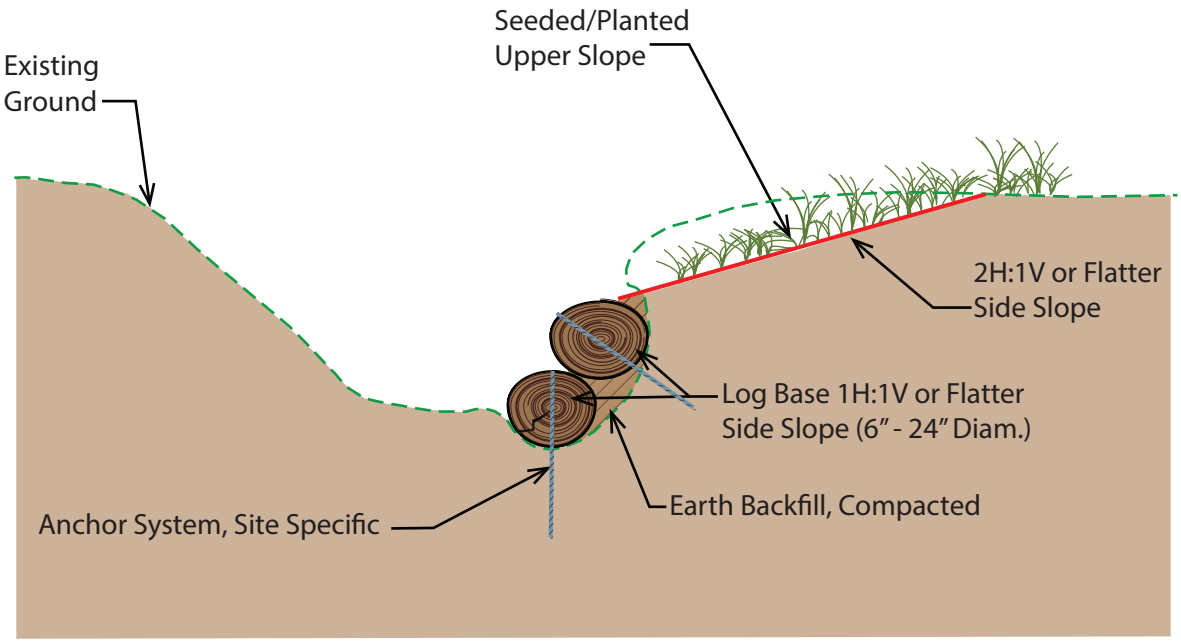
Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. Installation of the logs is self-mitigating. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[2] Source: Adapted from Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices

[3] Source: Santa Clara Valley Water District, “Design Manual Open Channel Hydraulics and Sediment Transport.” July 2009





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; adapted from Santa Clara Valley Water District; "Design Manual Open Channel Hydraulics and Sediment Transport", July 2009; updated by Montrose, 2023

#3: CONTOUR WATTLING

DESCRIPTION

This method consists of tying long bundles of plant stems (typically willows or cottonwoods) together with twine and anchoring them in shallow trenches with wooden stakes or cuttings. When the stems develop root systems and mature, the plants establish structural soil stabilization properties. This technique is generally used to manage surface erosion.

Excellent revegetation potential. The long bundles trap and hold soil on banks by creating small, dam-like structures, effectively cutting the slope length into a series of shorter slope lengths. This method enhances the conditions for colonization of native species and should, where appropriate, be used with other soil bioengineering systems and live plantings. Reinforcement at the base of the bank slope may be a limiting factor (see bank stabilization methods 3A and 3B). Not appropriate for treatment of slopes actively undergoing mass earth movement[4].

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

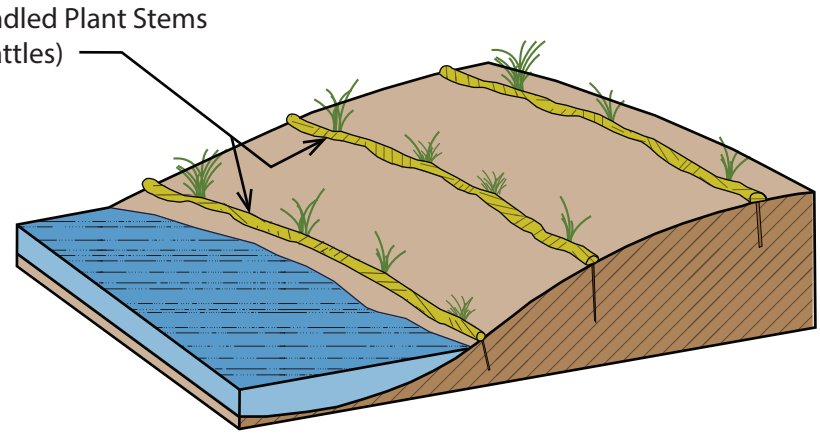
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Planting shall be installed as follows: Wattle wood shall be collected and soaked at least 10 days prior to installation. Prepare trenches (1/2 depth of wattle) and install wattles in location as approved by engineer. Live stakes/cuttings may be used as wattle stakes. Firmly attach bundles with rope to stakes. Provide supplemental irrigation if needed. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

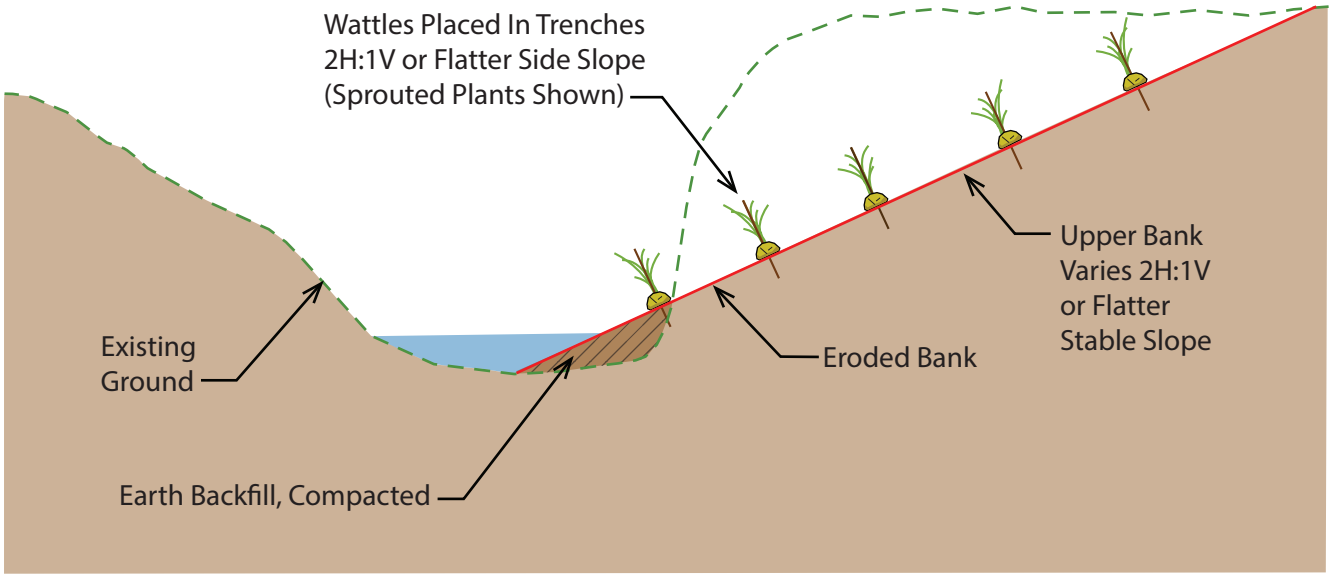
HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. Installation of the planted contour wattles is self-mitigating. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[4] Source: Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; updated by Montrose, 2023

#3A: CONTOUR WATTLING WITH BOULDER BASE

DESCRIPTION

This method consists of tying long bundles of plant stems together with rope and anchoring them in shallow trenches with wooden stakes or cuttings. When the stems develop root-systems and mature, the plants establish structural soil stabilization properties.

Appropriately-sized boulders are placed at the base of the rebuilt bank up to the elevation indicated by the hydraulic analysis. Voids in between the boulders can be planted using live stakes.

Excellent revegetation potential. The long bundles trap and hold soil on banks by creating small, dam-like structures, effectively cutting the slope length into a series of shorter slope lengths. This method enhances the conditions for colonization by native species and should, where appropriate, be used with other soil bioengineering systems and live plantings. Not appropriate for treatment of slopes actively undergoing mass earth movement[5].

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for contour wattling section of slope, and slopes of 1.5:1 or flatter for boulder section.

Boulders must be keyed in (minimum 3-foot depth) at the base of the bank. Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

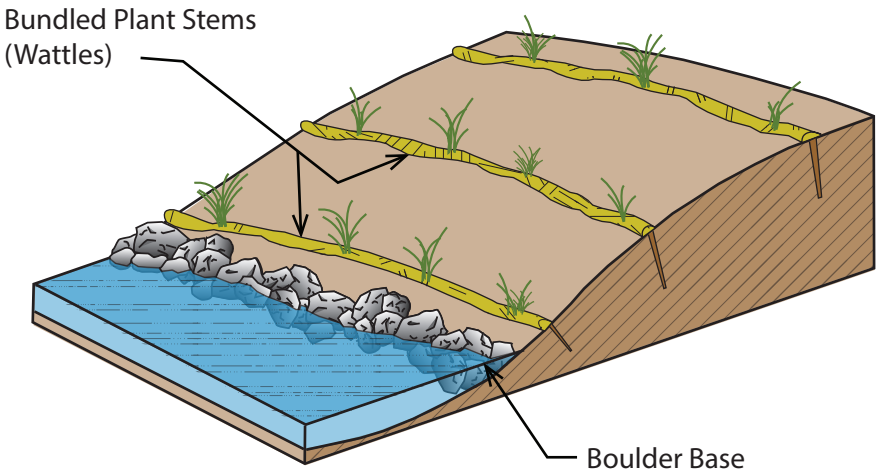
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Planting shall be installed as follows: Wattle wood shall be collected and soaked at least 10 days prior to installation. Prepare trenches (½-depth of wattle) and install wattles in location as approved by engineer. Live stakes/cuttings shall be used as wattle stakes. Firmly attach bundles with rope to stakes. Provide supplemental irrigation if needed. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

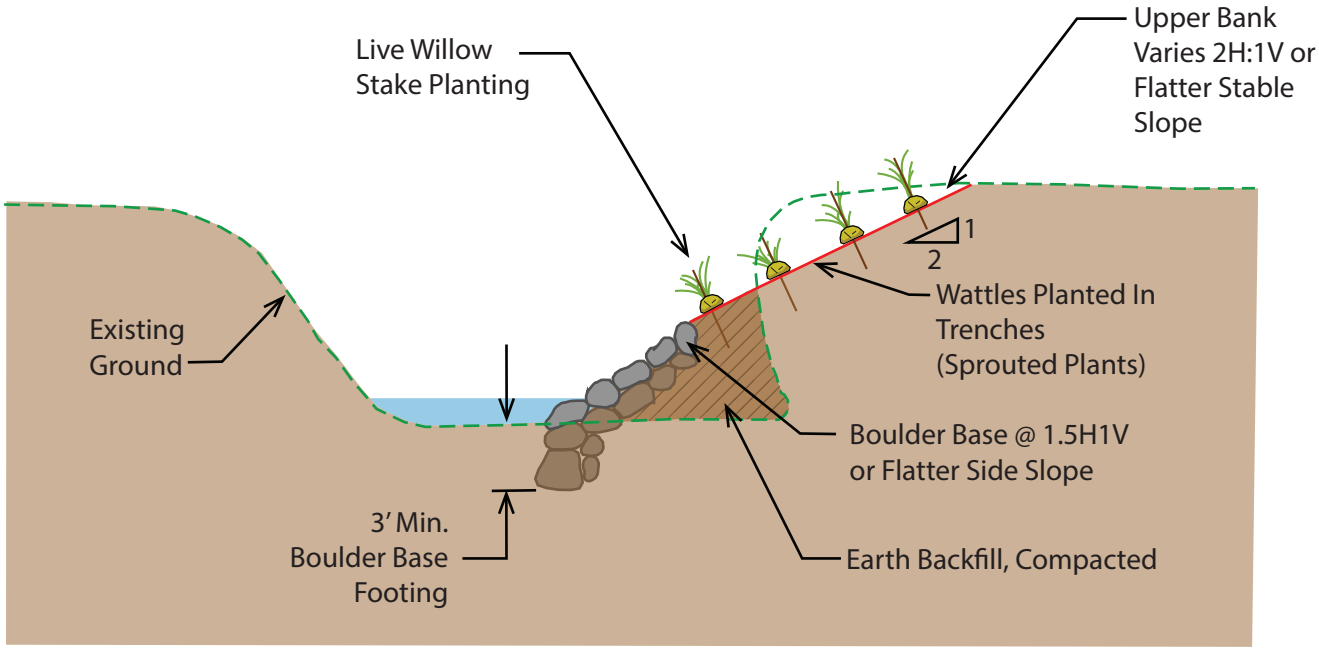
HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[5] Source: Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; updated by Montrose, 2023

#3B: CONTOUR WATTLING WITH LOG BASE

DESCRIPTION

Contour wattling consists of tying bundles of plant stems together with rope and anchoring them in shallow trenches with wooden stakes or cuttings. When the stems develop root systems and mature, the plants establish structural soil stabilization properties.

Logs are anchored to the bed and/or native bank up to the elevation indicated by the hydraulic analysis. Determine scour depth, log size (typically between 6 inches to 24 inches in diameter), and anchor system based on specific site conditions. Where applicable and/or appropriate, rootwads may also be used.

This repair method is used to protect the toe line from erosion as well as manage surface erosion. It is especially useful for long straight channel reaches. The logs provide immediate protection from erosion while contour wattlings contribute to long-term durability and ultimately replace the decaying logs.

Excellent revegetation potential. The long bundles trap and hold soil on banks by creating small, dam-like structures, effectively cutting the slope length into a series of shorter slope lengths. This method enhances the conditions for colonization by native species and should, where appropriate, be used with other soil bioengineering systems and live plantings. Not appropriate for treatment of slopes actively undergoing mass earth movement[6].

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for contour wattling section of slope, and slopes of 1.5:1 or flatter for the log base section. Install the log base with anchors.

Appropriate for local stream velocities of 15 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

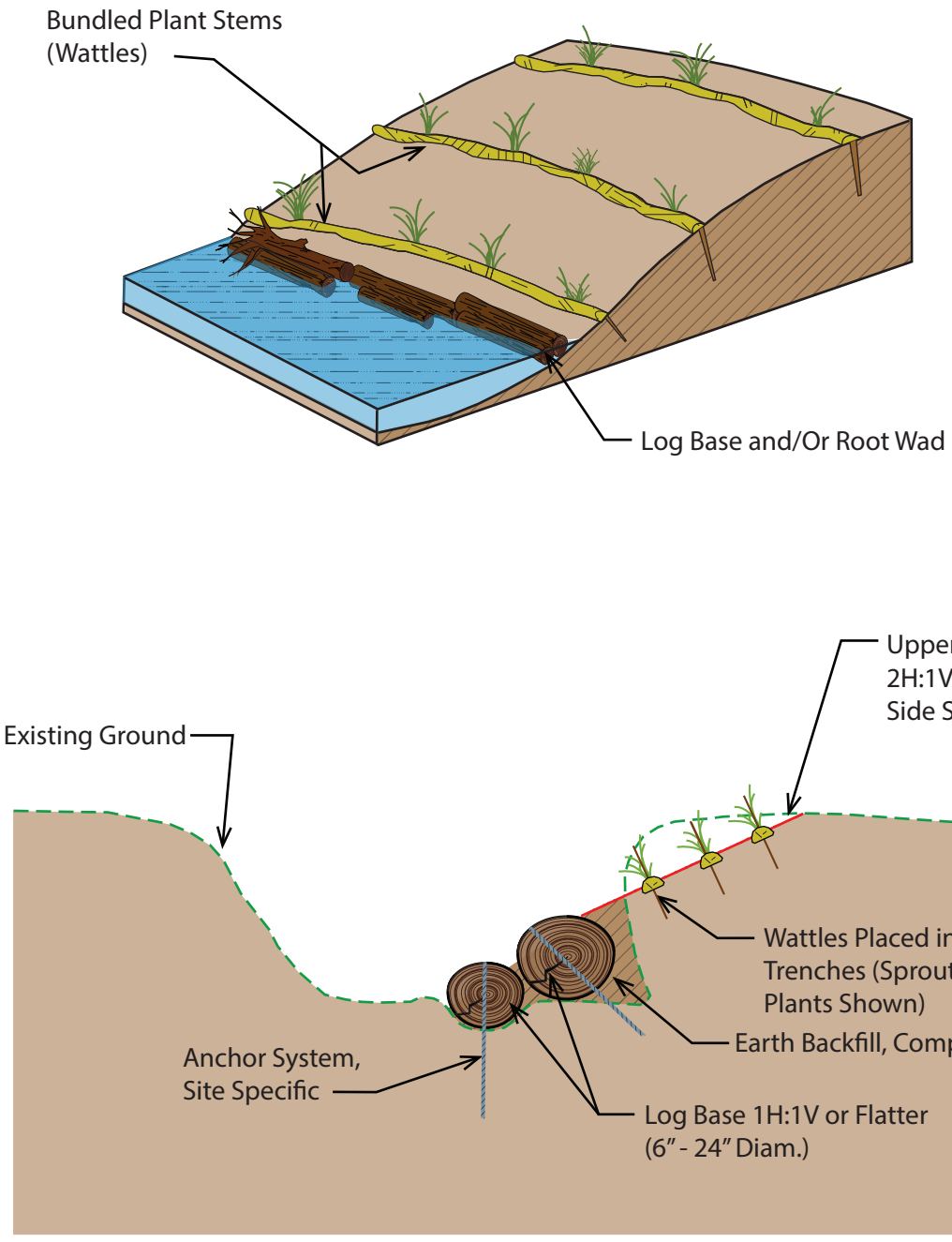
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Planting shall be installed as follows: Wattle wood shall be collected and soaked at least 10 days prior to installation. Prepare trenches (½-depth of wattle) and install wattles in location as approved by engineer. Live stakes/cuttings shall be used as wattle stakes. Firmly attach bundles with rope to stakes. Provide supplemental irrigation if needed. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[6] Source: Adapted from Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.



SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; updated by Montrose, 2023

#4: BRUSH MATTRESS (BRUSH LAYERING)

DESCRIPTION

The eroded slope is graded and smoothed to ensure all stakes are in contact with soil. A minimum 2-foot deep trench is dug at the base of the bank for the butt ends of the branches. Wood, steel, or live stakes are partially driven in rows on three-foot centers in the area that will be covered by the mattress. After the stakes have been placed, live branches are put on the bank with their butt ends in the trench. Straight branches no shorter than 4 feet in length and ½ inch to 1 inch in diameter are used. If the branches are not long enough to reach the upper end of the mattress, several layers may be used; however, it is necessary to "shingle" the layers by lapping each new layer over the one below by at least 18 inches.

Once the bank is covered by a thick layer, cross branches are placed horizontally over the bottom layer. These branches are placed against the stakes and then tied to the stakes using wire or rope. The stakes are then driven into the bank a minimum of two feet or deeper, if possible. After the completion of the mattress, the base trench is filled with appropriately sized boulders and rocks to anchor the butt ends of the branches. The entire mattress is then covered by earth or fine stream material[7].

This method forms an immediate protective cover over the stream bank, captures sediment during flood flows, and rapidly restores riparian vegetation and streamside habitat. This method is not appropriate where toe scour is anticipated (see bank stabilization methods 4A and 4B). This method should not be used on slopes that are experiencing ongoing mass movement or other slope instability[8].

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

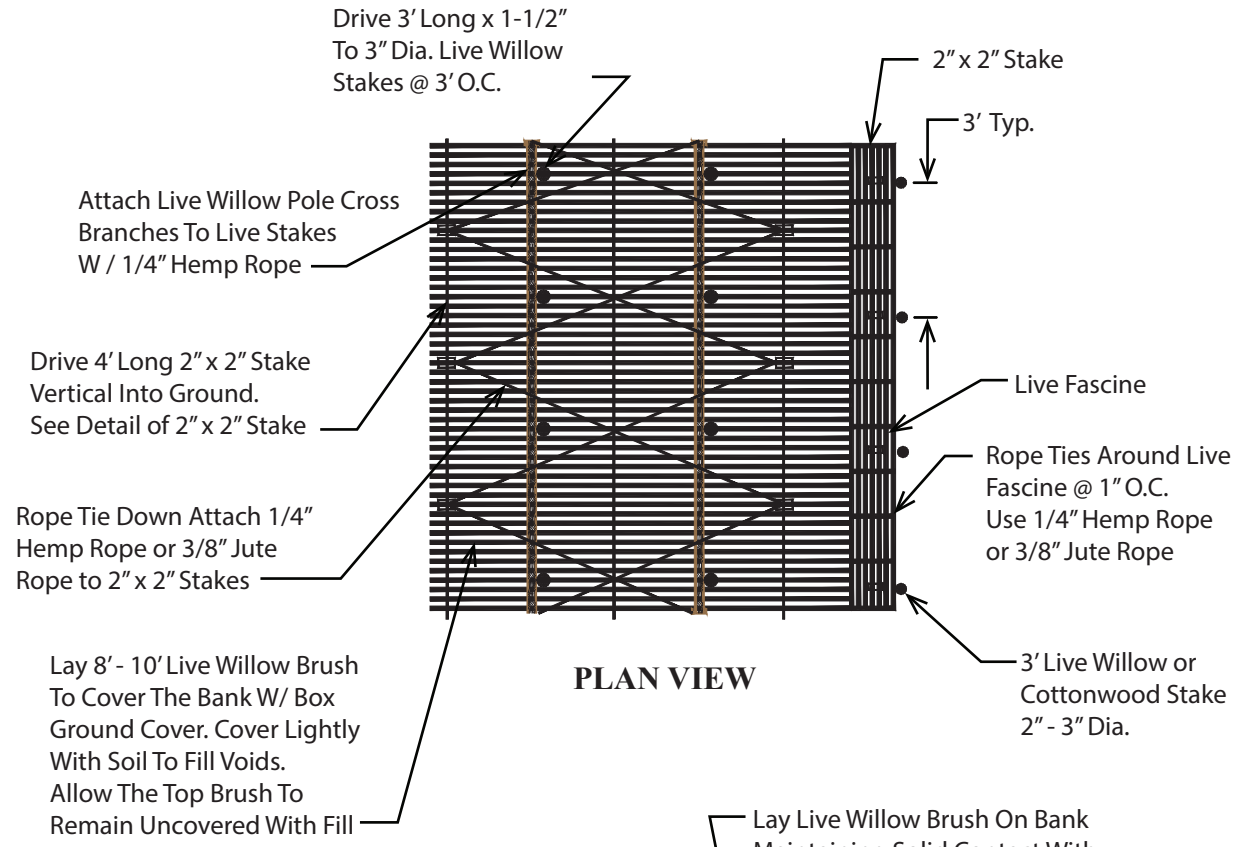
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Planting shall be installed as follows. Wood for mattressing shall be collected and soaked at least 10 days prior to installation. Install in location as approved by engineer. Prepare trenches. Install butt ends so that excellent contact with moist soil is maintained. Keep moist throughout installation. Live stakes/cuttings may be used as mattress stakes. Firmly attach rope to stakes in a criss-cross fashion so that bottom layer of wood is in contact with the slope. Provide supplemental irrigation if needed. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

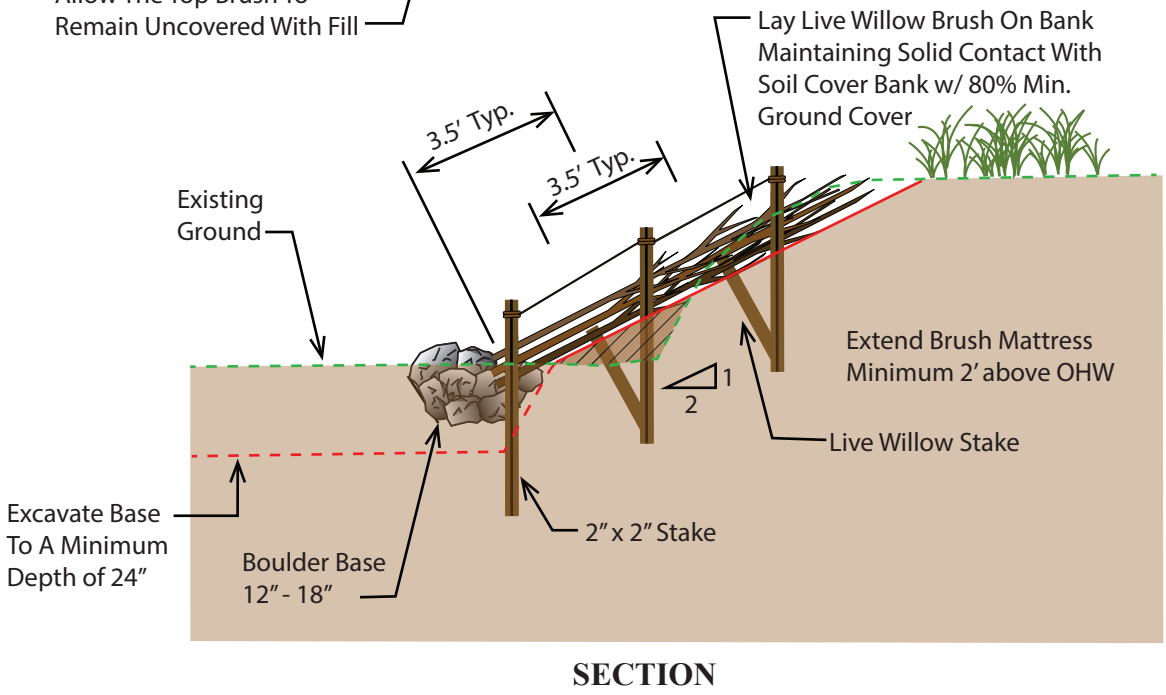
HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[7] Source: California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual.
[8] Source: Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.





Source: Adapted From Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; updated by Montrose, 2023

#4A: BRUSH MATTRESS (BRUSH LAYERING) WITH BOULDER BASE

DESCRIPTION

The lower portion of the eroded slope (as indicated by the hydraulic analysis) is graded at a maximum of 1.5:1 slope. The upper portion of the slope is graded at a minimum slope of 2:1 and smoothed to ensure all plantings are in contact with soil. Appropriately-sized boulders are placed at the base of the rebuilt bank up to elevation indicated by the hydraulic analysis. Voids between the boulders can be planted using live stakes.

A minimum 2-foot deep trench is dug at the top of the boulder line for the butt ends of the branches. Wood, steel, or live stakes are partially driven in rows on three-foot centers in the area that will be covered by the mattress. After the stakes have been placed, live branches are put on the bank with their butt ends in the trench. Straight branches no shorter than 4 feet in length and ½ inch to 1 inch in diameter are used. If the branches are not long enough to reach the upper end of the mattress, several layers may be used; however, it is necessary to "shingle" the layers by lapping each new layer over the one below by at least 18 inches. Once the bank is covered by a thick layer of willows, cross branches are placed horizontally over the bottom layer. These branches are placed against the stakes and then tied to the stakes using wire or rope. The stakes are then driven into the bank a minimum of two feet or deeper, if possible. After the completion of the mattress, the toe trench is back filled with boulders and rocks to anchor the butt ends of the branches. The entire mattress is then covered by earth or fine stream material[9].

This method forms an immediate protective cover over the stream bank, captures sediment during flood flows, and rapidly restores riparian vegetation and streamside habitat. This method should not be used on slopes that are experiencing ongoing mass movement or other slope instability[10].

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for brush mattress section of slope. 1.5:1 or flatter for the boulder section.

Boulders must be keyed in (minimum 3-foot depth) at the base of the bank.

Appropriate for local stream velocities of 6 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Planting shall be installed as follows: Wood for mattressing shall be collected and soaked at least 10 days prior to installation. Install in location as approved by engineer. Prepare trenches. Install butt ends so that excellent contact with moist soil is maintained. Keep moist throughout installation. Live stakes/cuttings may be used as mattress stakes. Firmly attach rope to stakes in a criss-cross fashion so that bottom layer of wood is in contact with slope. Provide supplemental irrigation if needed. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

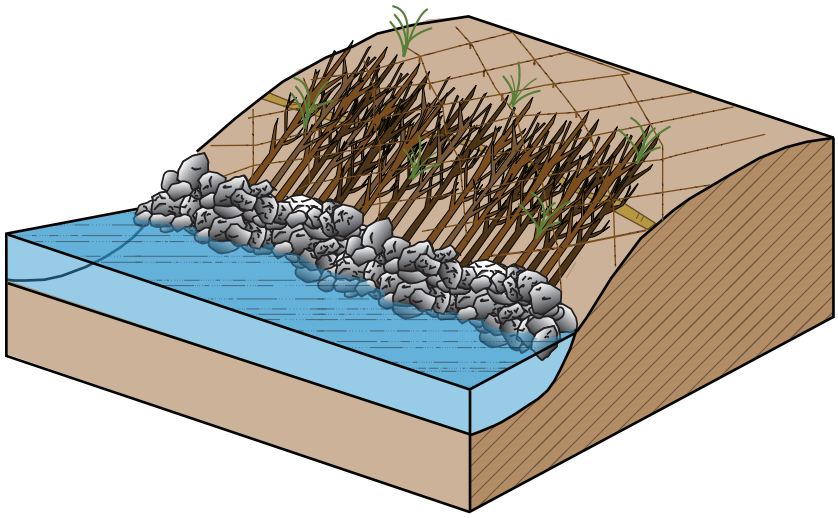
[9] Source: Adapted from California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual.

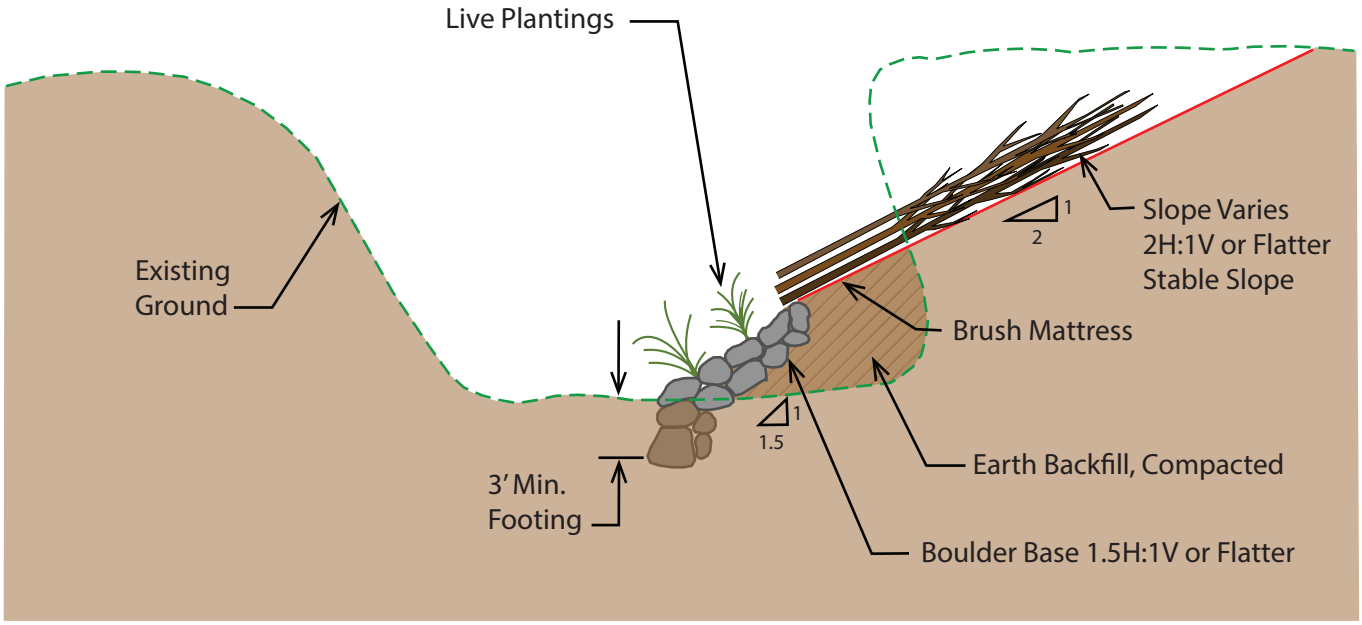
[10] Source: Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. This repair method includes revegetation of the repair area using native species. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; Updated by Montrose, 2023

#4A: Brush Mattress (Brush Layering) with Boulder Base Bank Stabilization Methods

MONTROSE ENVIRONMENTAL

#4B: BRUSH MATTRESS (BRUSH LAYERING) WITH LOG BASE

DESCRIPTION

Brush mattress with log base consists of grading the upper and lower portions of the eroded slope at a minimum of 2:1 and maximum of 1:1 slopes respectively, and smoothed to ensure all willows are in contact with soil. Logs are placed at the base of the native bank up to the elevation indicated by the hydraulic analysis. Where applicable and or available, rootwads may be used in combination with logs.

A maximum 2-foot deep trench is dug at the top of the log base for the butt ends of the willow branches. Wood, steel, or live willow stakes are partially driven in rows on three-foot centers in the area that will be covered by the mattress. After the stakes have been placed, live branches are put on the bank with their butt ends in the trench. Straight branches no shorter than 4 feet in length and ½ inch to 2 inches in diameter are used. If the branches are not long enough to reach the upper end of the mattress, several layers may be used; however, it is necessary to "shingle" the layers by lapping each new layer over the one below by at least 18 inches. Once the bank is covered by a thick layer of willows, cross branches are placed horizontally over the bottom layer. Stakes are then driven into the bank as deep as possible.

These branches are placed against the stakes and then tied to the stakes using biodegradable wire or rope. After the completion of the mattress, the toe trench is back filled with logs to anchor the butt ends of the branches. The entire mattress is then covered by earth or fine stream material[11].

This method forms an immediate protective cover over the stream bank, captures sediment during flood flows, and rapidly restores riparian vegetation and streamside habitat. This method should not be used on slopes that are experiencing ongoing mass movement or other slope instability[12].

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for brush mattress section of slope. 1:1 or flatter for the log base section.

Install log base with anchors. An evaluation of the vegetation communities up- and down-stream of the erosion site, the optimal vegetated habitat the site can support given the local soil, moisture, and hydraulic conditions determines appropriate vegetation species.

Appropriate for local stream velocities of 15 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

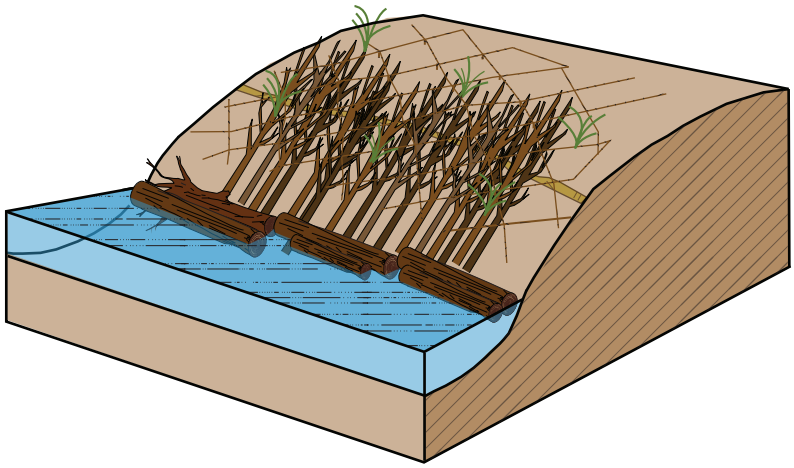
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Planting shall be installed as follows: Wood for mattressing shall be collected and soaked at least 10 days prior to installation. Install in location as approved by engineer. Prepare trenches. Install butt ends so that excellent contact with moist soil is maintained. Keep moist throughout installation. Live stakes/cuttings may be used as mattress stakes. Firmly attach rope to stakes in a criss-cross fashion so that bottom layer of wood is in contact with slope. Provide supplemental irrigation if needed. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

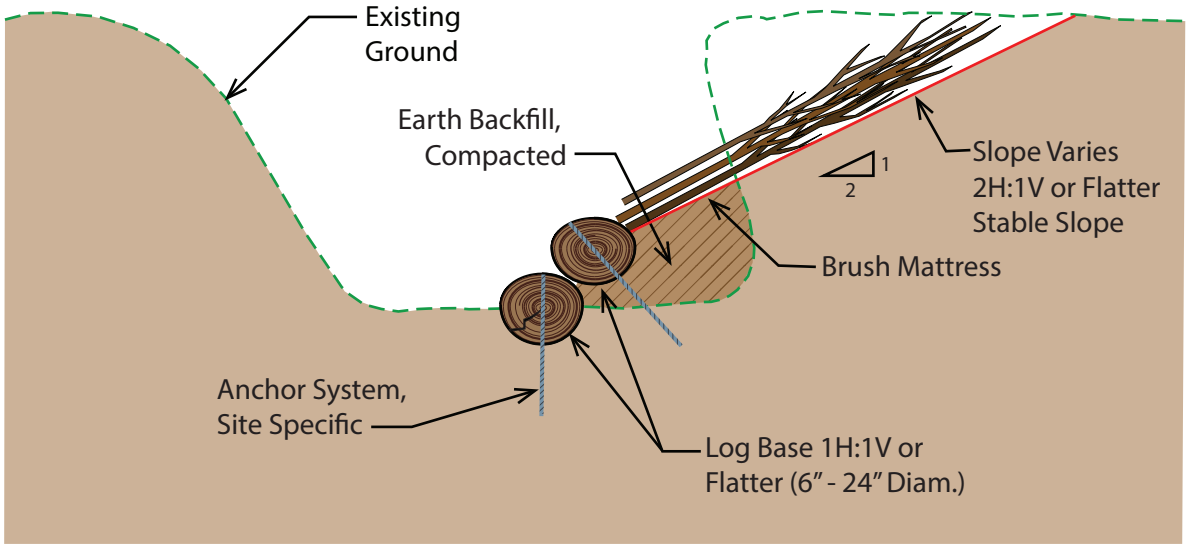
[11] Source: Adapted from Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.
[12] Source: California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; Adapted from California Department of Fish and Game, California Salmonid Stream Habitat Restoration Manual; Updated by Montrose, 2023

#4B: Brush Mattress (Brush Layering) with Log Base
Bank Stabilization Methods

MONTROSE ENVIRONMENTAL

#5: SURFACE MATTING (EROSION MATS)

DESCRIPTION

This method consists of securing, jute, or geotextile erosion control fabric to channel banks using stakes or staples. These materials provide soft armor protection against erosive forces and are combined with plantings. Abrasive sediment, debris, foot traffic, and sunlight will wear, snag, and tear these fabrics with time, potentially undermining the structure. These methods are intended to be the skeleton of a vegetated erosion control system. The establishment of vegetation is crucial to the long-term success of erosion mats.

Works best in small, uniform, improved channels with mild bank slopes. This method has good revegetation potential. Base protection is required where scour is anticipated at the base of the slope (see bank stabilization methods 5A and 5B).

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter.

Typically, appropriate for local stream velocities of 12 feet per second or less depending on the type of erosion mat and revegetation method selected.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site, and the optimal vegetated habitat the site can support given the local soil, moisture, and hydraulic conditions, as well as erosion control effectiveness. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP

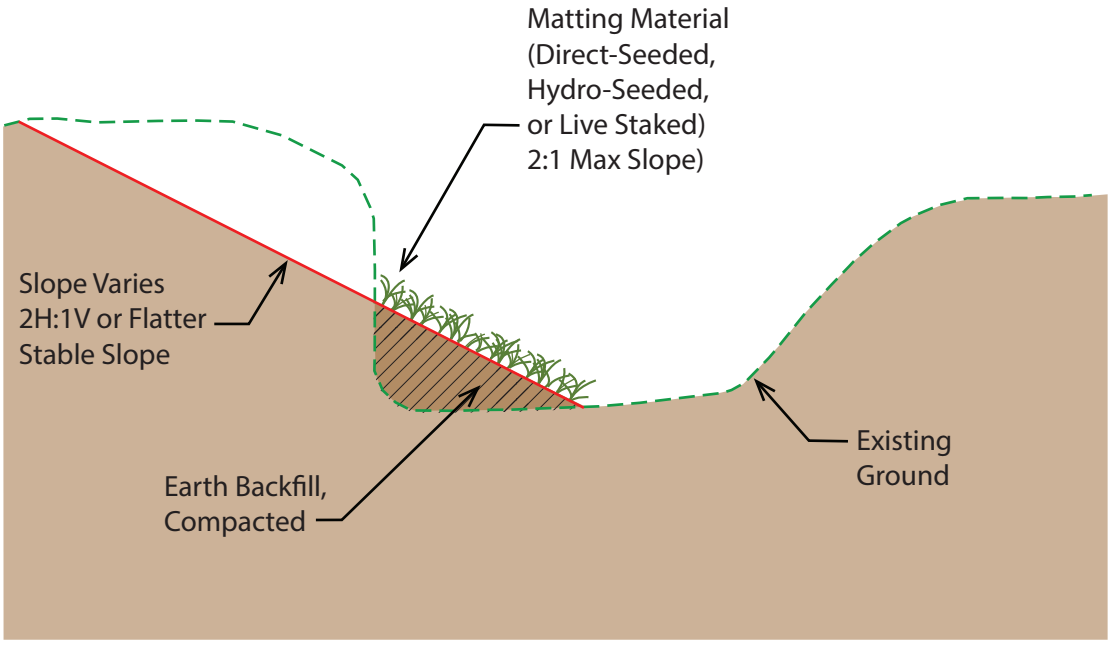
Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as log placement allows

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. This repair method includes revegetation of the repair area using native species. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.



SECTION

Source: Updated by Montrose, 2023

#5: SURFACE MATTING (EROSION MATS)



Before—Guadalupe River d/s Trimble



After—Guadalupe River d/s Trimble

#5A: SURFACE MATTING (EROSION MATS) WITH BOULDER BASE

DESCRIPTION

The lower portion of the eroded slope (below the elevation indicated by the hydraulic analysis) is graded at a maximum of 1.5:1 slope. The upper portion of the slope is graded at a minimum slope of 2:1 and smoothed to ensure erosion mat is in full contact with soil. Appropriately-sized boulders are placed at the base of the rebuilt bank up to the elevation indicated by the hydraulic analysis. Voids between the boulders can be planted.

In the upper portion of the slope, jute, or geotextile erosion control fabric is attached to channel banks using staking or staples. These materials provide soft armor protection against erosive forces and are combined with planting. Debris, foot traffic, and sunlight will wear, snag, and tear these fabrics with time. The boulder base protection will prevent undermining of the structure. These methods are intended to be the skeleton of a vegetated erosion control system.

Works best in uniform improved channels with mild bank slopes. This method has good revegetation potential.

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for erosion mat section of slope. 1.5:1 or flatter for the boulder section.

Boulders must be keyed in (minimum 3-foot depth) at the base of the bank.

Appropriate for local stream velocities of 6 feet per second or less if boulders are planted with live stakes; 12 feet per second if boulders are not planted.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

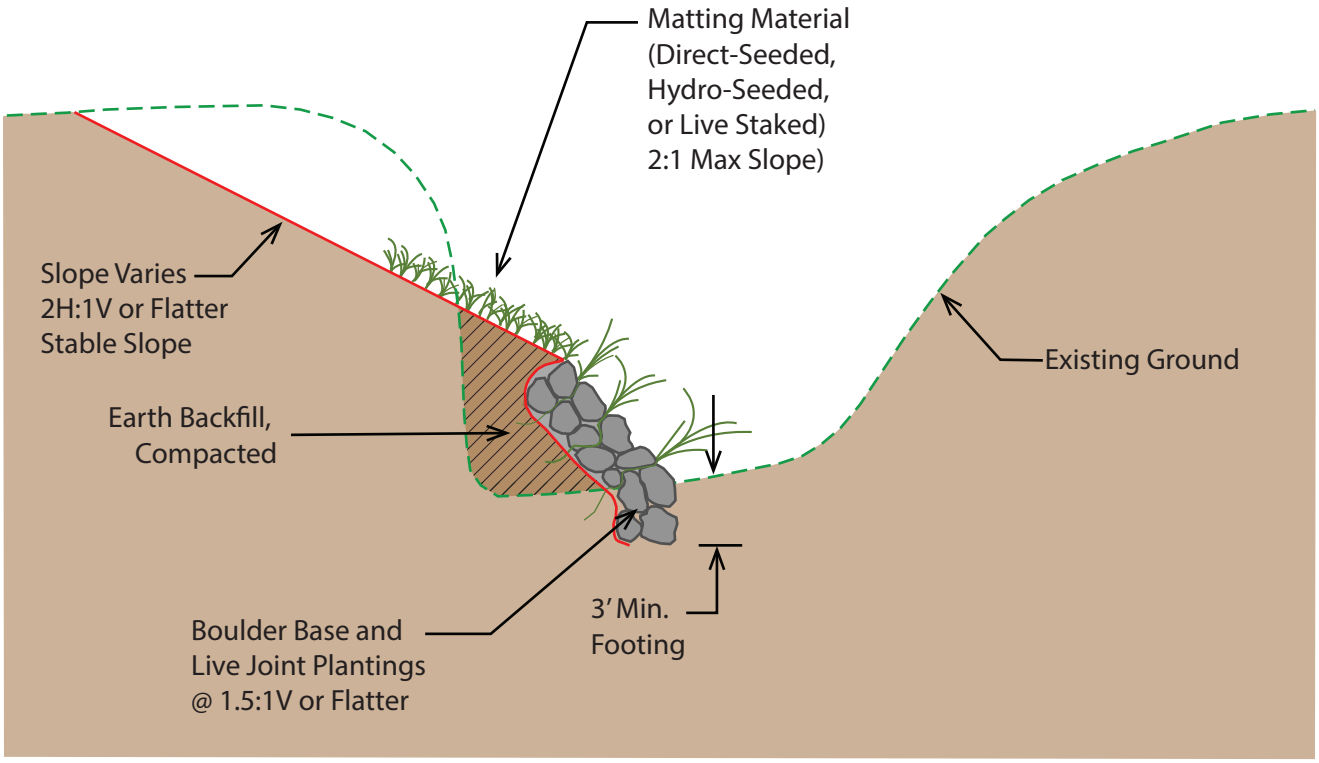
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. This repair method includes revegetation of the repair area using native species. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.



SECTION

Source: Updated by Montrose, 2023

#5A: Surface Matting (Erosion Mats) with Boulder Base Bank Stabilization Methods

#5A: SURFACE MATTING (EROSION MATS) WITH BOULDER BASE (HYBRID)



Before—Veg Saratoga Creek d/s Bollinger



After—Veg Saratoga Creek d/s Bollinger

#5A: SURFACE MATTING (EROSION MATS) WITH BOULDER BASE (HARD)



Before—Greystone Creek u/s Olive Branch



After—Greystone Creek u/s Olive Branch

#5B: SURFACE MATTING (EROSION MATS) WITH LOG BASE

DESCRIPTION

Surface matting with log base consists of grading the upper and lower portions of the eroded slope (up to the elevation indicated by the hydraulic analysis) at a minimum of 2:1 and maximum of 1.5:1 slopes respectively, and smoothed to ensure erosion mat is in full contact with soil. Logs are placed at the base of the native bank up to the elevation indicated by the hydraulic analysis. Root wads may be used, where applicable and/or available.

In the upper portion of the slope, jute, or geotextile erosion control fabric is attached to channel banks using stakes, staples, or anchors. These materials provide soft armor protection against erosive forces and are combined with planting. Debris, foot traffic, and sunlight may wear, snag, and tear these fabrics with time. The log base protection will prevent undermining of the structure. These methods are intended to be the skeleton of a vegetated erosion control system.

This repair type works best in uniform improved channels with mild bank slopes and has good revegetation potential.

DESIGN CRITERIA

Appropriate on bank slopes of 2:1 or flatter for erosion mat section of slope. 1.5:1 or flatter for the log section.

Install the log base with anchors.

Appropriate for local stream velocities of 15 feet per second or less.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

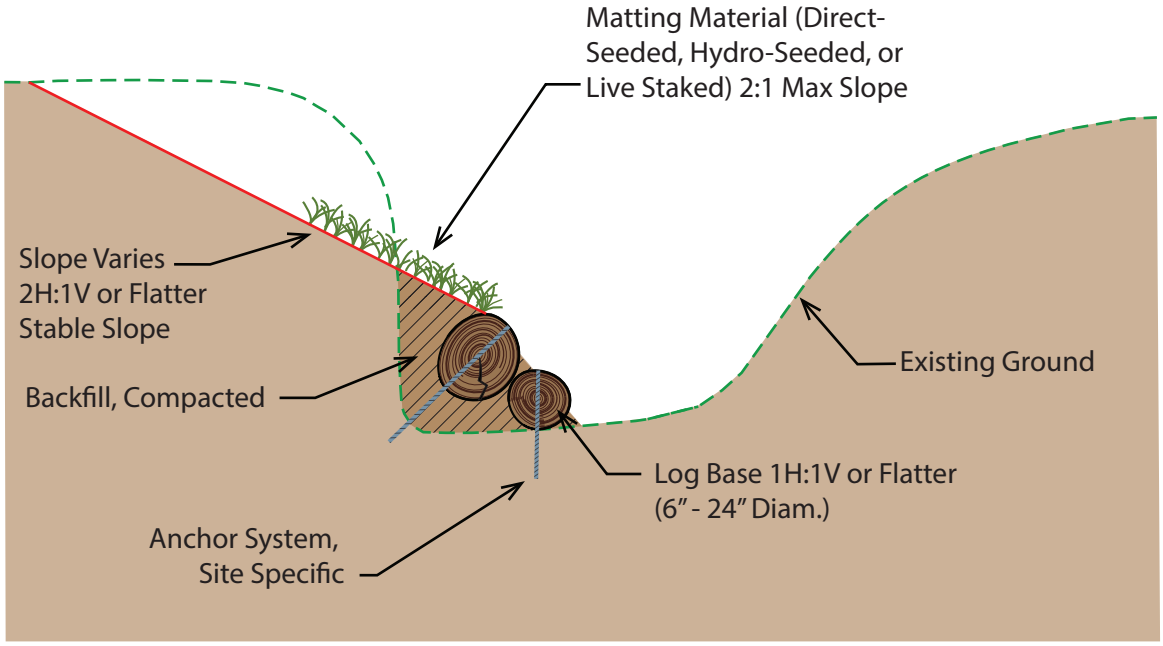
Plantings will be installed as follows:

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as log placement allows

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.



SECTION

Source: Updated by Montrose, 2023

#5B: Surface Matting (Erosion Mats) with Log Base Bank Stabilization Methods

#6: ADD ROCK TO INVERT

DESCRIPTION

This is a technique most commonly used to armor a channel invert susceptible to incision or scour downstream of various control structures such as bridges or concrete channels. Rock channel bottoms can also be valuable in terms or reoxygenation of water in the creek. This installation method can also retard stream turbidity in many cases[13].

Rocks are placed in scour holes or along the invert for the appropriate length as indicated by the hydraulic analysis, depending on the length and depth of repair needed. This can include scour holes just downstream of a drop structure that needs armoring, or an entire reach of channel can be armored with well-graded, angular rock to stop incision. If lining a long length of channel, rocks can be formed into a concave shape and a key can be constructed every few hundred feet to stabilize the lining.

DESIGN CRITERIA

Appropriate for incised channels or scour holes downstream of a concrete portion of creek.

HABITAT IMPACT ASSESSMENT

Channel bottom:	May adversely impact biotic resources
Bank:	May adversely impact biotic resources

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.

[13] Source: Santa Clara Valley Water District, Design Manual, Open Channel Hydraulics and Sediment Transport, June 2009.

#6: ADD ROCK TO INVERT



Before—Regnart Creek d/s Pacifica



After—Regnart Creek d/s Pacifica

#6A: ROCK CROSS VANES

DESCRIPTION

The cross-vane is a grade control structure that decreases near-bank shear stress, velocity and stream power, but increases the energy in the center of the channel. The structure will establish grade control, reduce bank erosion, create a stable width/depth ratio, and maintain channel capacity, while maintaining sediment transport capacity and sediment competence. The cross-vane is also a stream habitat improvement structure.

The cross-vane is typically composed of a row of header rocks and a row of footer rocks. The header rocks can be installed with half of its size embedded below the final grade. The footer rocks are installed downstream of and at a lower elevation than the header rocks to provide support. The top of the footer rocks are positioned at the final grade[14].

With the channel boundary opening up at the floodplain level, the vane may be properly keyed into the side slopes, an advantage not easily afforded by incised channels14. Each leg of the vane typically makes an angle of 20-30 degrees with the bank[15].

Method 6A (Rock Cross Vanes) and Method 6E (Bendway Weirs) share similar, but also slightly different, characteristics. Both are grade control structures, but direct the energy of flow in different ways. Bendway weirs direct flows away from the outer bank toward the inner bank, while rock cross vanes direct flows to the center of the channel. Length, height, and level of each structure also vary depending on design criteria. Bendway weirs are level-crested (flat), whereas cross vanes are sloped. Length of bendway weirs is determined by future thalweg location, whereas for cross vanes, length is determined by height at bank end and vane slope angle. Height of bendway weirs is determined by base flow (typically one foot above base flow) and for cross vanes, height varies from half-bank full stage to bank full stage.

DESIGN CRITERIA

Appropriate in “B” and “F” type channels, according to Rosgen’s stream classification system.

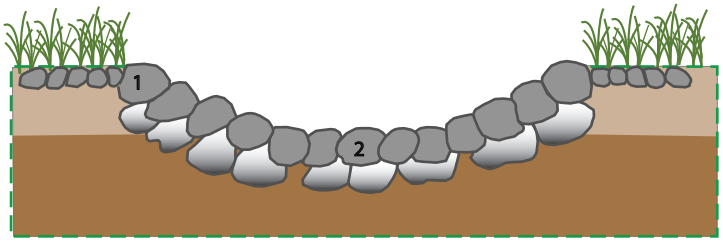
HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

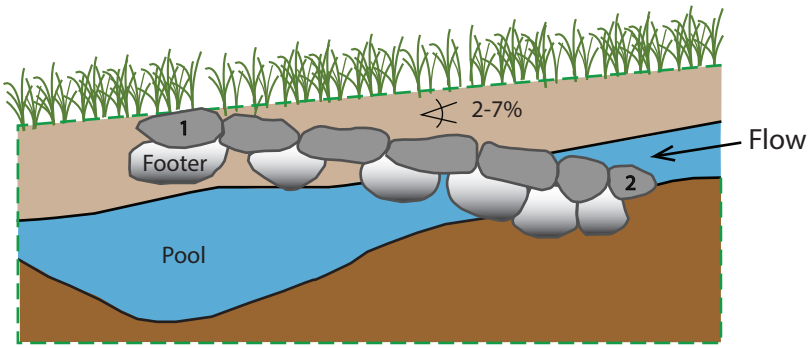
Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies. Permanent impacts associated with rock placement will be mitigated on-site through a NMFS-approved methodology as described in Chapter 10 of the Manual. No additional mitigation is required if the agencies provide written concurrence that rock placed along the channel bed provides habitat complexity functions.

[14] Source: Santa Clara Valley Water District, Design Manual, Open Channel Hydraulics and Sediment Transport, June 2009.

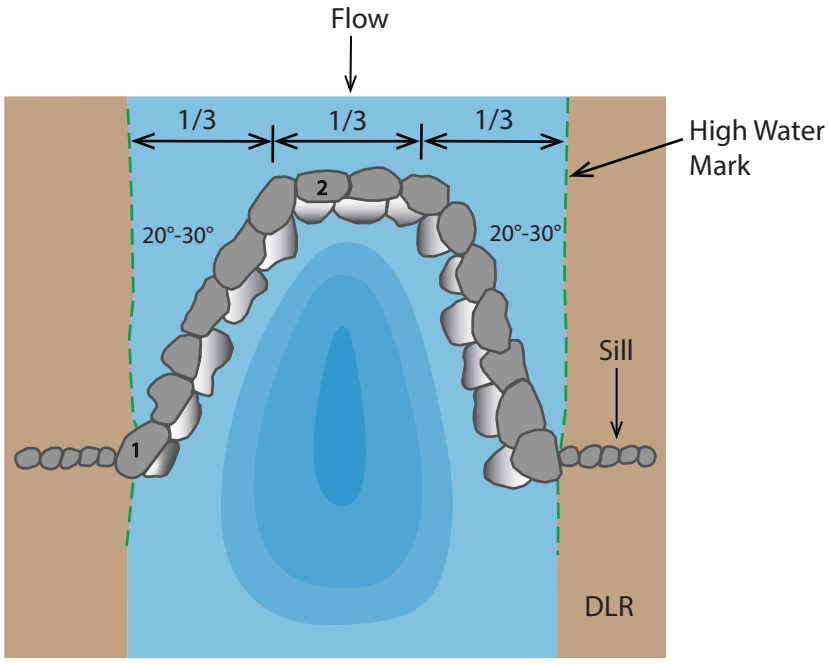
[15] Source: Wildland Hydrology, Inc.; Rosgen, David L.P.H.; “The Cross-Vane, W-Weir and J-Hook Vane Structures…Their Description, Design and Application for Stream Stabilization and River Restoration.”



CROSS-SECTION VIEW



PROFILE VIEW



PLAN VIEW

Source: Wildland Hydrology, Inc.: Rosgen, David L, P.H.; "The Cross-Vane, W-Weir and J-Hook Vane Structures... Their Description, Design and Application for Stream Stabilization and River Restoration"; updated by Horizon, 2022

#6A: ROCK CROSS VANES



Before—Permanente Creek u/s Charleston



After—Permanente Creek u/s Charleston

#6B: ROOT WADS AND BOULDERS

DESCRIPTION

This method combines boulders, logs, and live plant material to armor a stream bank. Fish habitat is enhanced in addition to creating a natural-looking bank stabilization structure[16].

Footer logs are set in a toe trench below the thalweg line with the channel end pointed downstream and the butt end angled 45 to 60 degrees upstream. A second log (with root wad) is set on top of the footer log diagonally, forming an "X." The root wad end is set pointing upstream and the butt end lying downstream 45 to 60 degrees. The apex of the logs is anchored together using boulders, re-bar or cables. Large boulders are placed on top and between the logs at each apex. After all the logs and boulders are set in place, live plant material such as willows is placed within the spaces of the structure, behind the boulders. Excavated gravel and stream materials can then be placed over the bank end portion of the structure.

This method will tolerate high boundary shear stresses if logs and root wads are well-anchored. This method should, where appropriate, be used in conjunction with soil bioengineering or live vegetation plantings to stabilize the upper bank and ensure a regenerative source of stream bank vegetation. The life of the structure depends on the species of logs used. It might need replacement if vegetative colonization does not take place. This method can create local scour (channel bottom) and erosion (opposite bank)[17].

DESIGN CRITERIA

Appropriate for channel velocities at 10 feet per second or less.

Note: Velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

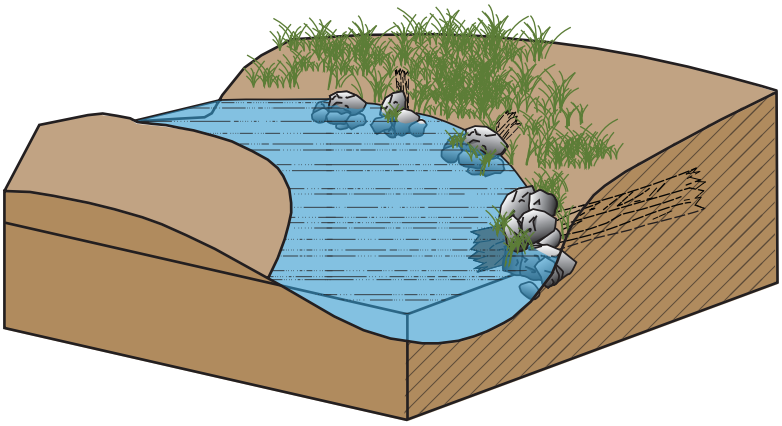
Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as log and rock placement allows

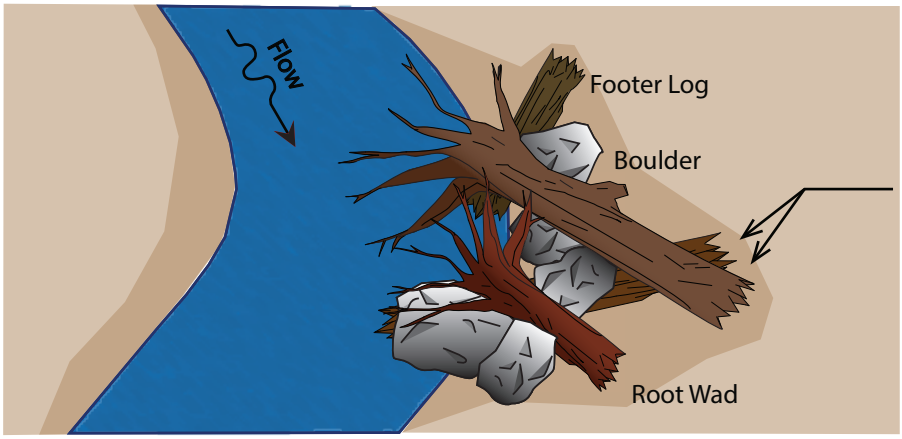
HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

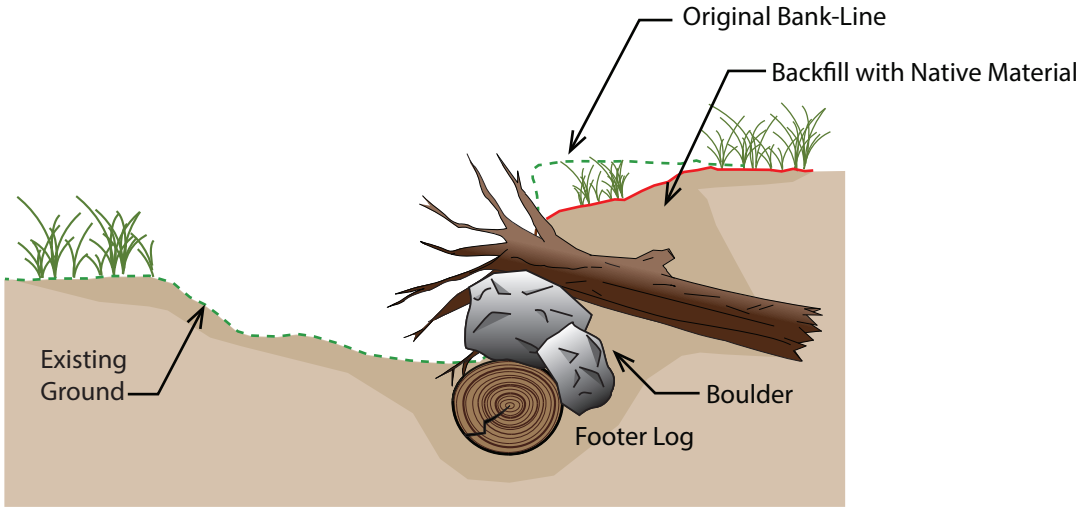
Mitigation: On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[16] Source: California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual.
[17] Source: Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.





PLAN VIEW



SECTION

Source: Adapted From Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; Adapted From California Department of Fish and Game, California Salmonid Stream Habitat Restoration Manual; updated by Montrose, 2023

#6C: LIVE LOG CRIB WALLS

DESCRIPTION

Log crib walls are used to reduce sediment input and protect banks in areas where logs are available and boulders are not practical[18]. Cribbing provides protection in areas with near-vertical banks where bank sloping options are limited by issues such as right of way restrictions[19]. Crib walls afford a natural appearance, immediate protection, and accelerate the establishment of woody species19. This method is effective on the outside of bends where high velocities are present and in situations where a low wall may be required to stabilize the base of the bank and reduce slope steepness19. This method does not adjust to toe scour and should be used in combination with soil bioengineering systems and live plantings to stabilize the upper slopes19. Logs should be selected for soundness, durability, uniformity of size, and ease of handling (straight logs much preferred) and delivery.

Two rows of base logs or untreated timbers are placed in trenches below stream grade to prevent undercutting of the structure. Base logs should be as large (long and thick) as can be manipulated while conforming to the contour of the stream bank. Good base logs are crucial to ensure stability and durability of the cribwall18. Geotextile fabric should be placed behind and inside the face of (to keep material in) the structure. Tie-back logs are notched, nailed, or bolted into the base logs and placed at regular intervals (6 to 8 feet typically) along the base logs.

Tie-back logs are attached to both rows of base logs. Once the first row of tie-back logs has been connected a second set of face logs is placed on top of the tie-backs. These logs are placed approximately 6 inches back into the slope. This procedure is repeated until the desired level of bank protection is achieved. As each lift is constructed, the face logs and tie-backs are filled with a mix of gravel and cobbles to the top of the face log. It is not necessary to use topsoil in the fill material; but there should be sufficient fine-grained material to insure vegetation growth. Live cuttings are then laid in to form a complete cover layer. These live branches should be long enough to have their butt end in the native soil behind the crib wall. The tips should stick out of the crib wall no more than a quarter of the cutting total length. The branches are then covered with gravel/cobble mix to the top of the tie-backs and the nest layer is continued.

DESIGN CRITERIA

Appropriate for slopes up to 0.25:1.

Appropriate for velocities from 6 feet per second up to 12 feet per second, depending on opening size.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix

[18] Source: California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual.
[19] Source: Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.

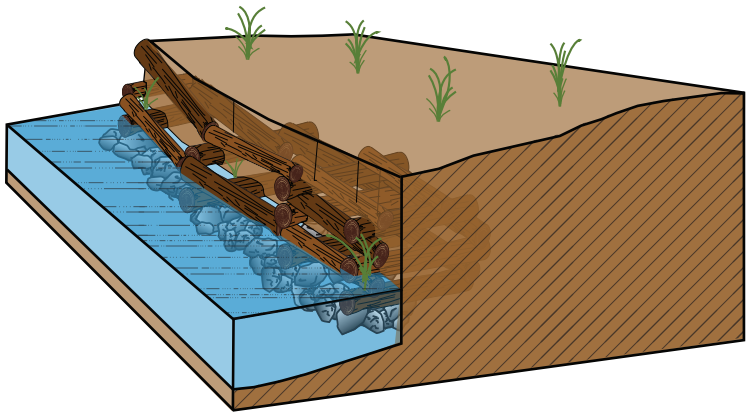
per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

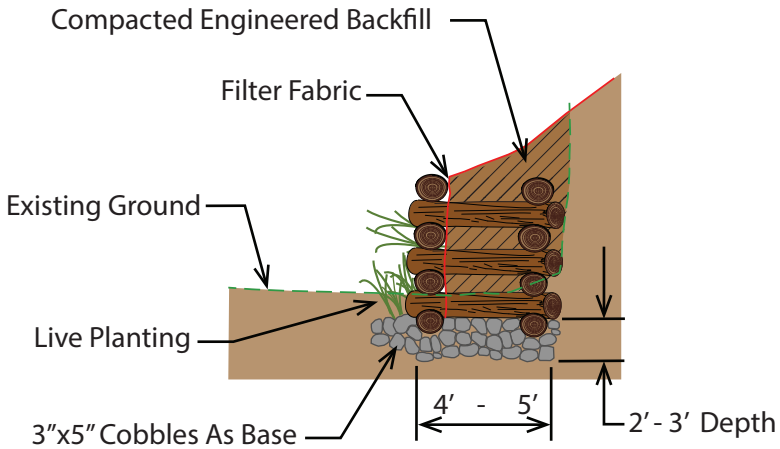
Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as log placement allows

HABITAT IMPACT ASSESSMENT

Channel bottom:	Minimizes further degradation of biotic resources, with limited revegetation potential.
Bank:	Minimizes further degradation of biotic resources, with limited revegetation potential.

Mitigation: On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.





SECTION

Source: Adapted From Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; Adapted from California Department of Fish and Game, California Salmonid Stream Habitat Restoration Manual; updated by Montrose, 2023

#6D: LOG REVETMENT

DESCRIPTION

For sites where erosion has cut out the base of the bank and a portion of a steep bank and there is no room for shaping back the bank slope, log revetment may be used for bank repair. Log revetment is a stack of logs that forms the protected bank slope with compacted soil backfill behind the logs. Each individual log is anchored to the foundation and rebar is used to connect logs to each other. The logs are cut to fit the size of the eroded bank. There is minimal excavation except to clear away debris and loose materials. Live tree roots are saved as much as possible by burying them in the soil backfill[20].

Log revetment will be mitered to match the upstream and downstream bank slopes. The bottom log of the log revetment is aligned with the upstream and downstream toe line to minimize encroachment into the flow area20. Two adjacent logs are laid below grade to act as a footing for the structure. These footer logs are anchored into the native ground using either rebar or duckbill anchors and cable, or some other site-appropriate anchoring method. Logs are then stacked one on top of the other, at the appropriate slope, and are rebarred to one another. Each log is anchored into existing ground using duckbill anchors and cable, rebar, or another site-appropriate method, until the appropriate height is obtained.

DESIGN CRITERIA

Appropriate on steep bank slopes 0.25:1 or flatter. Appropriate for velocities up to 15 feet per second.

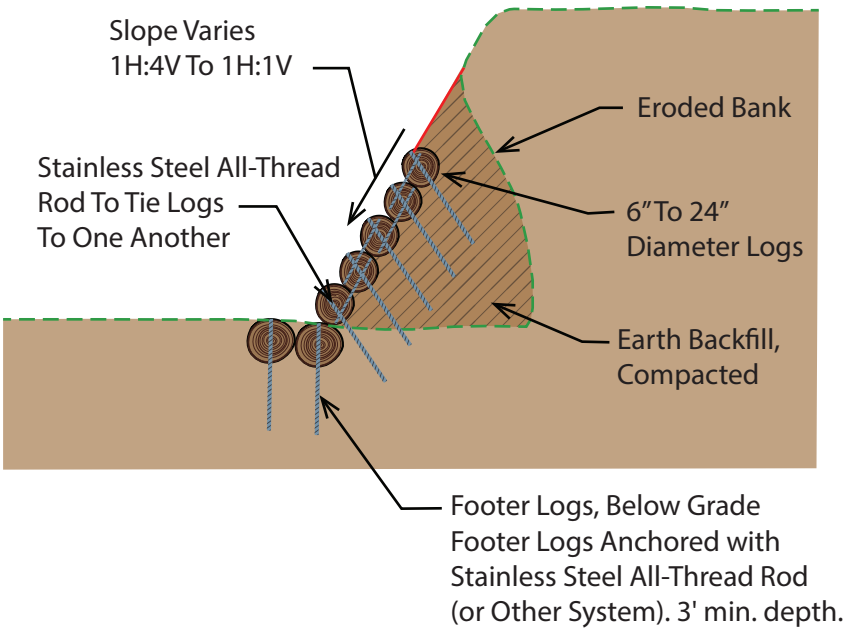
Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[20] Source: Santa Clara Valley Water District, Design Manual, Open Channel Hydraulics and SedimenTransport, June 2009.



SECTION

Source: Updated by Montrose, 2023

#6E: BENDWAY WEIRS

DESCRIPTION

Bendway weirs are instream grade control structures used as a means for thalweg management. Typically, a minimum of five structures are placed in series (known as a “weir field”) to move, realign, or relocate the stream thalweg through a bend and downstream of the weir field. Weirs are typically ⅓-½ the width of the stream and consist of submerged upstream-angled stone sills (5,000-lb maximum weight stone) placed perpendicular along the outer banks. These structures direct flows toward the inner bank, decreasing velocities on the outer bend allowing sediment to deposit. This method will also reduce bank erosion since near bank shear stresses are decreased as flows are diverted away from the outer bank.

When placed in degraded streams, bendway weirs can mimic the environmental benefits of large woody debris by providing cover and creating rearing habitat for fish. They increase the diversity and complexity of the streambed habitat with the formation of stable scour holes at the end of weir fields, deep pools between weirs, and pool-riffle regimes[21]. Since minimal upper bank clearing is required, disturbance to terrestrial habitats is also minimized.

Method 6A (Rock Cross Vanes) and Method 6E (Bendway Weirs) share similar, but also slightly different, characteristics. Both are grade control structures, but direct the energy of flow in different ways. Bendway weirs direct flows away from the outer bank toward the inner bank, while rock cross vanes direct flows to the center of the channel. Length, height, and level of each structure also vary depending on design criteria. Bendway weirs are level-crested (flat), whereas cross vanes are sloped. Length of bendway weirs is determined by future thalweg location, whereas for cross vanes, length is determined by height at bank end and vane slope angle. Height of bendway weirs is determined by base flow (typically one foot above base flow) and for cross vanes, height varies from half-bank full stage to bank full stage.

DESIGN CRITERIA

Flow direction is more important than shear or velocity when designing bendway weir structures.

Rock size used will determine the appropriate channel velocity this method can withstand.

HABITAT IMPACT ASSESSMENT

Channel Bottom:	Enhances biotic resources
Bank:	Enhances biotic resources

Mitigation: Off-site as specified in Table 10-4 and the SMP permits. Or On-site as specified in Table 10-4 and the SMP permits. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.

[21] Source: McCullah, John, & Donaly, Gray (2005); Environmentally-Sensitive Streambank Stabilization [E-SenSS CD]; “Design Manual for Environmentally Friendly Streambank Erosion Bendway Weirs.”

#7: CELLULAR CONFINEMENT SYSTEM

DESCRIPTION

Soil cellular confinement system (geocell) is a polyethylene plastic cellular system where structural strength is developed by the composite design of soil, plant roots, and the plastic's cellular configuration. This system is available in 8 inches deep honeycomb mats that are installed in offset vertical layers to create terraced planting areas. The honeycomb cells are filled with soil, moderately compacted, and planted with woody vegetation and grasses. The structure functions similarly to a crib wall structure.

This method has limited potential for vegetation establishment.

DESIGN CRITERIA

Appropriate for slopes up to 0.5:1.

Appropriate for velocities up to 6 feet per second.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

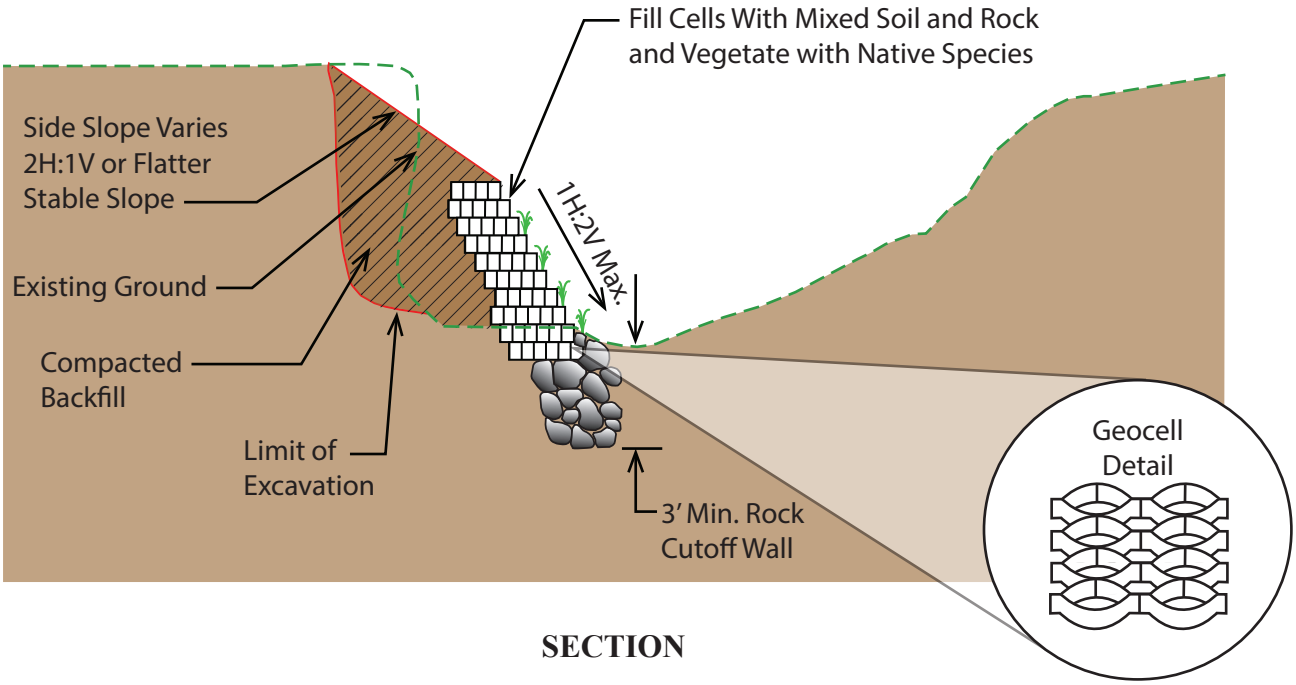
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center

HABITAT IMPACT ASSESSMENT

Channel bottom:	Permanent impact
Bank:	Permanent impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.



SECTION

Source: Updated by Montrose, 2023

#8: ROCK BLANKET

DESCRIPTION

This method consists of placing a blanket of appropriately-sized rock over the bank, to the extent indicated by the hydraulic analysis, to control erosion. Smaller cobbles may be placed in the voids of the rock to create a solid structure so as to minimize scour behind the rock and failure of the structure. This method is appropriate where long-term durability is needed, design discharge is high, there is significant threat to life or property, or there is no practical way to otherwise incorporate vegetation into the design. This method should, where appropriate, be used with soil-bioengineering systems or live vegetation to stabilize the upper bank and ensure a regenerative source of streambank vegetation. A major benefit to this method is that the components are flexible and function is not impaired by slight movement from settlement or other adjustments[22].

Angular rock should be used, because they tend to interlock, making the structure act like a single structure rather than a collection independent stones.

DESIGN CRITERIA

Appropriate for slopes up to 1.5:1, preferably 2:1. Rock sizes of 6 inches to 18 inches in diameter. Appropriate for velocities up to 15 feet per second.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

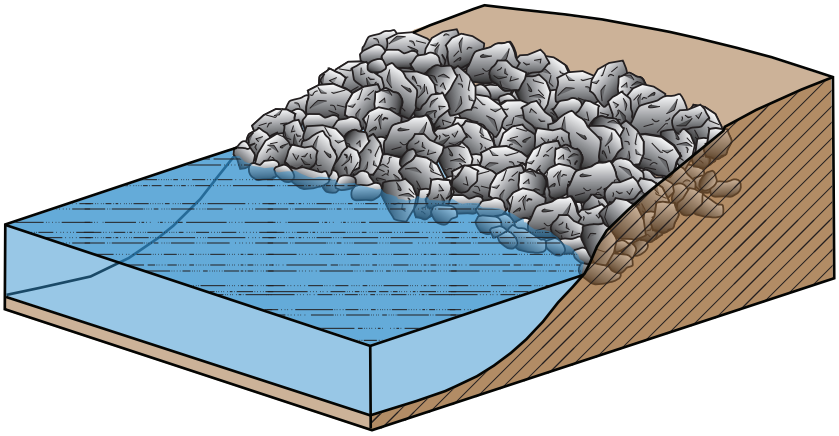
Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

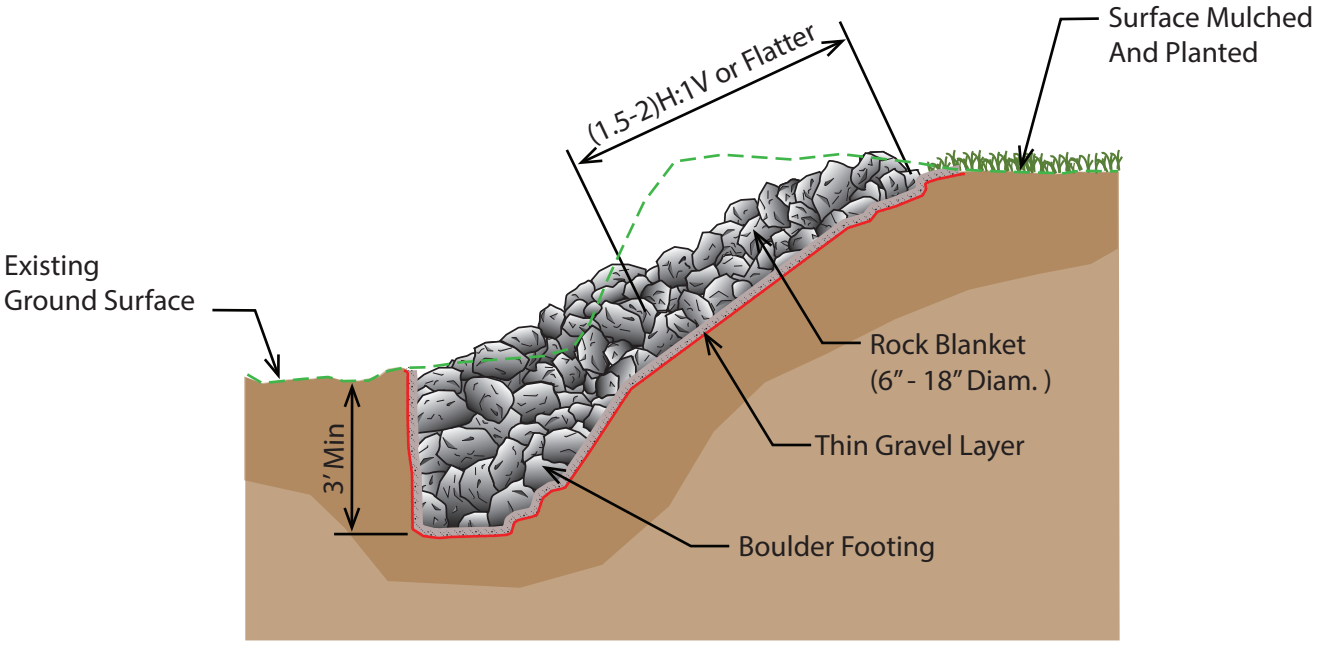
HABITAT IMPACT ASSESSMENT

Channel bottom:	Permanent Impact
Bank:	Permanent Impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.

[22] Source: Adapted from Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.





SECTION

Source: Source: Adapted From Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; Adapted from California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual; updated by Montrose, 2023

#8: ROCK BLANKET



Before—Calabazas Creek d/s Bollinger



After—Calabazas Creek d/s Bollinger

#8A: BOULDER REVETMENT

DESCRIPTION

Boulder revetment is a method for armoring stream banks with large boulders for preventing bank erosion. Revetment footing is laid in a “toe” trench dug along the base of the bank. Large boulders are then laid on the bank slopes up to the elevation indicated by the hydraulic analysis. Large angular boulders are best suited for this purpose. Boulder revetment can provide protection in areas where log or boulder instream structures may lead to bank erosion. The boulders used should be dense and structurally competent[23].

Geotextile fabrics should be avoided, as they prevent the natural establishment of vegetation23.

This method should, where appropriate, be used with soil bio-engineering systems or live vegetation to stabilize the upper bank and ensure a regenerative source of streambank vegetation. A major benefit of this method is that the components are flexible and function is not impaired by slight movement from settlement or other adjustments[24].

This structure would allow for some natural revegetation of the bank.

DESIGN CRITERIA

Appropriate for slopes up to 1:1, preferably 2:1.

Appropriate for velocities up to 6 feet per second if boulder joints are planted, 15 feet per second if boulders are not planted.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

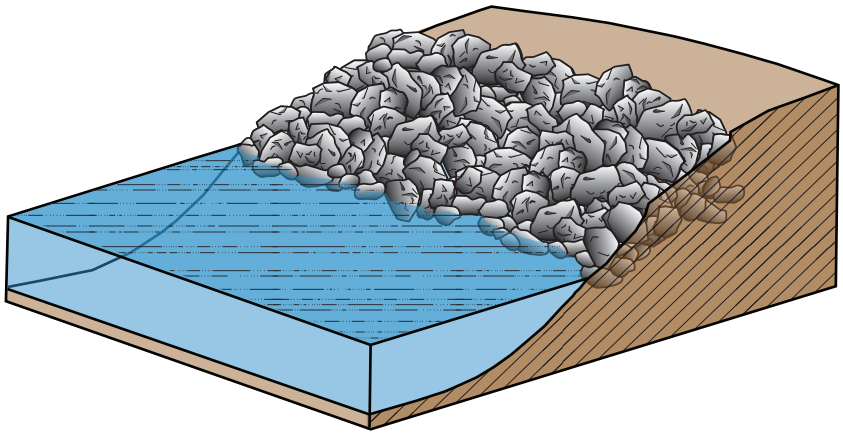
HABITAT IMPACT ASSESSMENT

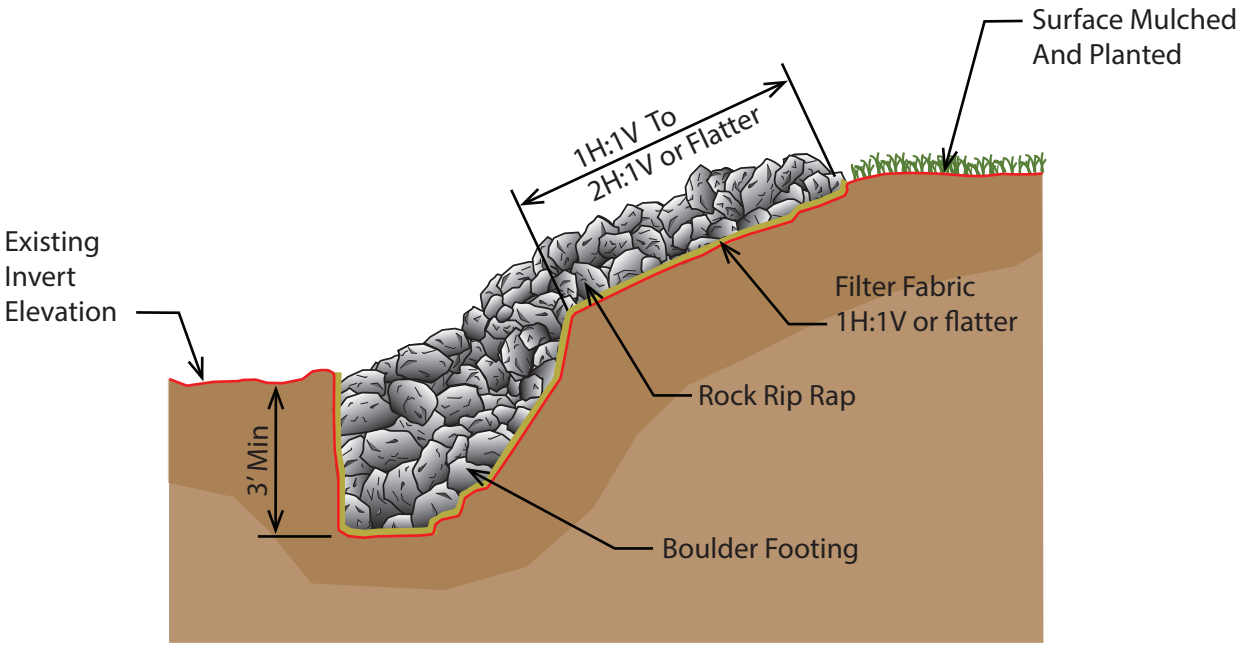
Channel bottom:	Permanent impact
Bank:	Permanent impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.

[23] Source: Adapted from California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual.

[24] Source: Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.





SECTION

Source: Source: Adapted From Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; Adapted from California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual; updated by Montrose, 2023

#8A: BOULDER REVETMENT



Before—Golf Creek d/s Culligan



After—Golf Creek d/s Culligan

#8B: BOULDER REVETMENT WITH SOIL AND VEGETATION

DESCRIPTION

Boulder revetment is a method for armoring stream banks with large boulders for preventing bank erosion. Revetment footing is laid in a “toe” trench dug along the base of the bank. Large boulders are then laid on the bank slopes up to the elevation indicated by the hydraulic analysis. Large angular boulders are best suited for this purpose. Boulder revetment can provide protection in areas where log or boulder instream structures may lead to bank erosion. The boulders used should be dense and structurally competent[25].

Soil is placed over the boulders and vegetation is installed by staking and/or direct seeding. Bio-degradable erosion control mats may be placed over the soil to help control erosion until vegetation establishes itself. Special care must be taken in staking to avoid damage to the stakes’ cambium and to ensure good soil/water/stake contact. Thick revetment layers may require special tools for establishing staking pilot holes[26].

Geotextile fabrics should be avoided, as they prevent the natural establishment of vegetation25.

This method should, where appropriate, be used with soil bio-engineering systems or live vegetation to stabilize the upper bank and ensure a regenerative source of streambank vegetation. A major benefit of this method is that the components are flexible and function is not impaired by slight movement from settlement or other adjustments26.

DESIGN CRITERIA

Appropriate for slopes up to 1:1, preferably 2:1. Appropriate for velocities up to 6 feet per second.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center or as rock placement allows

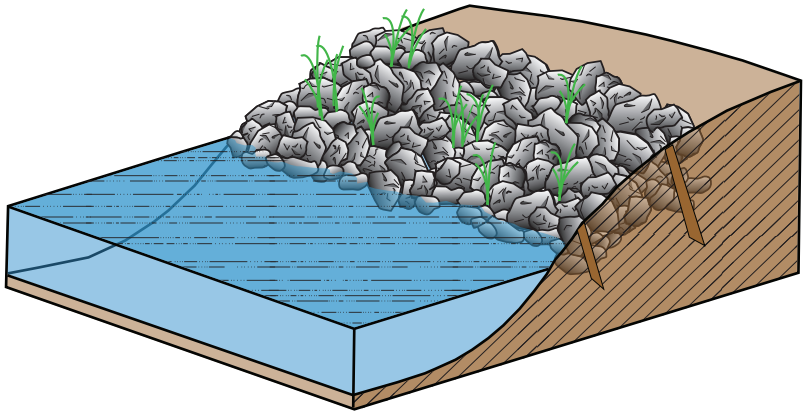
[25] Source: Adapted from California Department of Fish and Game. California Salmonid Stream Habitat Restoration Manual.

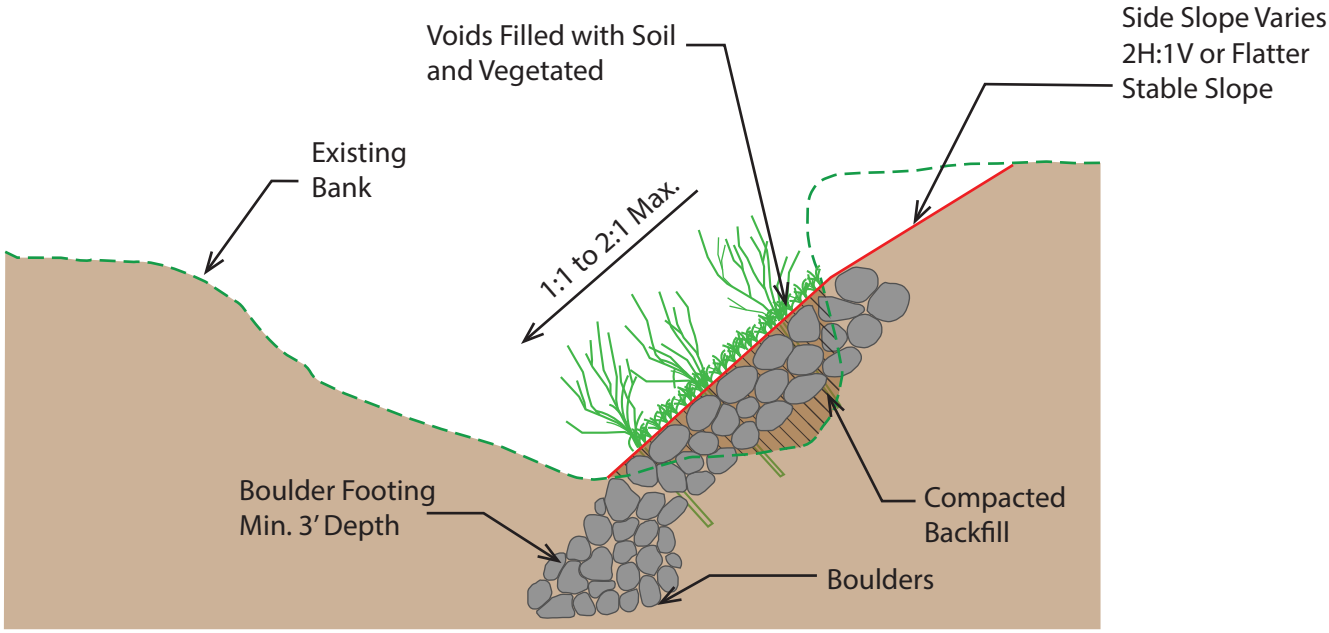
[26] Source: Adapted from Natural Resources Conservation Service. Stream Corridor Restoration Principles, Processes and Practices.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Enhances biotic resources
Bank:	Provides limited biotic resources

Mitigation: On-site/off-site as specified in Table 10-4 and the SMP permits. This method includes replanting of the repair area. Mitigation may be required depending on whether or not this method is used with soil bio-engineering systems or live vegetation to stabilize the upper bank and ensure a regenerative source of streambank vegetation. The revegetation effort will be monitored and tracked as set forth in the Manual and SMP permits until the established success criteria are met.





SECTION

Source: Adapted from Natural Resources Conservation Service, Stream Corridor Restoration Principles, Processes and Practices; updated by Horizon, 2022

#8B: BOULDER REVETMENT WITH SOIL AND VEGETATION



Before—Ross Creek u/s Los Gatos-Almaden



After—Ross Creek u/s Los Gatos-Almaden

#9: ARTICULATED CONCRETE BLOCKS

DESCRIPTION

Articulated concrete blocks (ACB) consists of concrete interlocking blocks that are cabled together to form mats that can be laid on the channel slope and/or channel bottom. The ACB is extended below the invert to form a cutoff wall.

ACBs are available in two styles: open cell and closed cell. The open cell style allows for vegetation to be recruited into the soil filing of the cell. Vegetation growth is restricted by the sizes of the cell openings and by the disconnection caused by the cell walls.

DESIGN CRITERIA

Appropriate for slopes 0.75:1 up to 3:1.

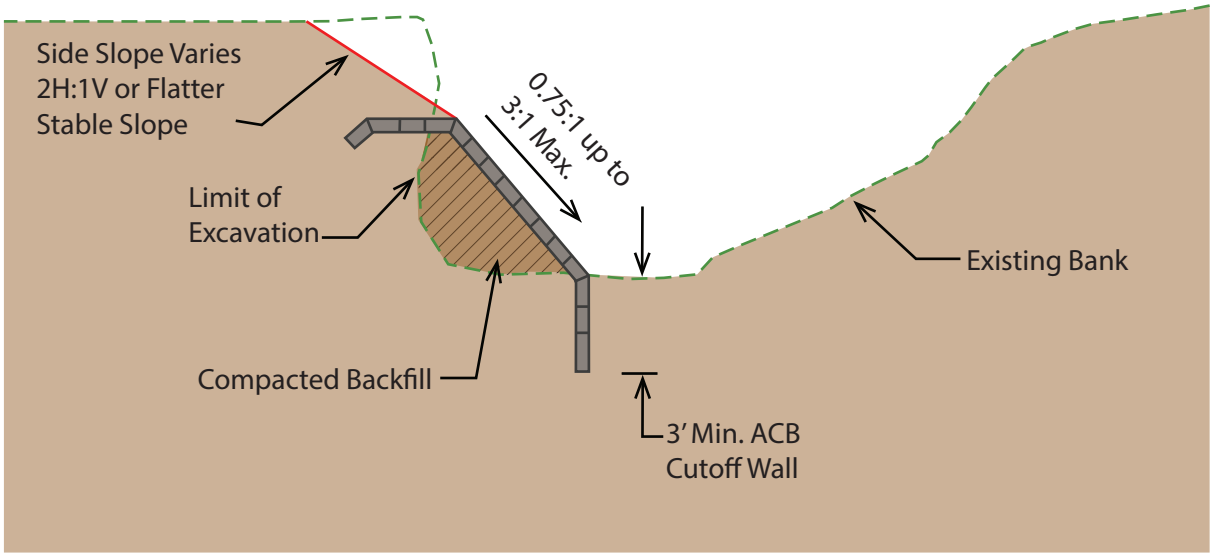
Appropriate for velocities up to 15 feet per second for closed cell ACBs, 6 feet per second for open cell ACBs.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Permanent impact
Bank:	Permanent Impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.



SECTION

Source: Updated by Montrose, 2023

#9A: ARTICULATED CONCRETE BLOCKS WITH PLANTING AREAS

DESCRIPTION

Articulated concrete blocks (ACB) consists of concrete interlocking blocks that are cabled together to form mats that can be laid on the channel slope and/or channel bottom. The ACB is extended below the invert as a cutoff wall to prevent undermining of slope protection.

ACBs are available in two styles: open cell and closed cell. The open cell style allows for vegetation to be recruited into the soil filing of the cell. Vegetation growth is restricted by the sizes of the cell openings and by the disconnection caused by the cell walls.

Open planting areas can be constructed into the ACB mats by creating an opening in the mat by removing some of the blocks. The open areas can be revegetated with shrubs and trees.

Irrigation is provided to the planted vegetation to aid plant establishment.

DESIGN CRITERIA

Appropriate for slopes up to 1:1.

Appropriate for velocities up to 15 feet per second for closed cell ACBs, 6 feet per second for open cell ACBs.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

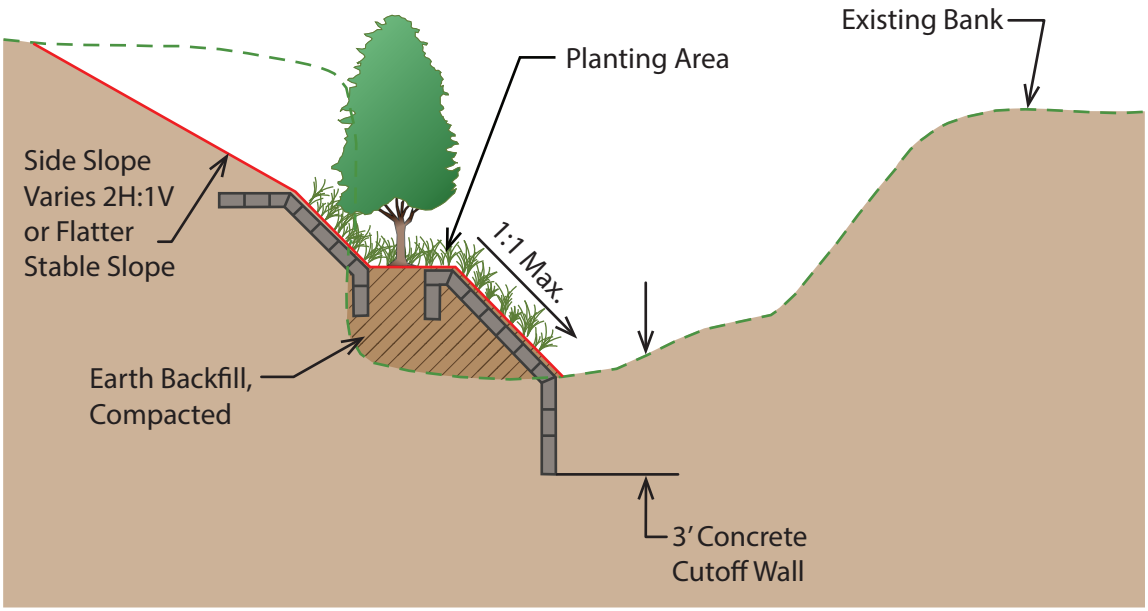
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center

HABITAT IMPACT ASSESSMENT

Channel bottom:	Permanent Impact
Bank:	Permanent Impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.



SECTION

Source: Updated by Montrose, 2023

#10: CONCRETE CRIB WALLS

DESCRIPTION

Concrete crib walls consist of stacked interlocking concrete frames that form a retaining wall. The structural strength is developed by the composite design of a concrete frame with compacted backfill. Crib walls are constructed with open face panels that are planted by live staking. This method restricts plant growth by the size of the panel opening. As the crib wall slope is flattened and the lattice becomes more open, the vegetation potential increases and the allowable velocity decreases because of the exposed soil and vegetation.

DESIGN CRITERIA

Appropriate for slopes up to 1:1.

Appropriate for velocities from 6 feet per second up to 15 feet per second, depending on the size of the crib wall's openings.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

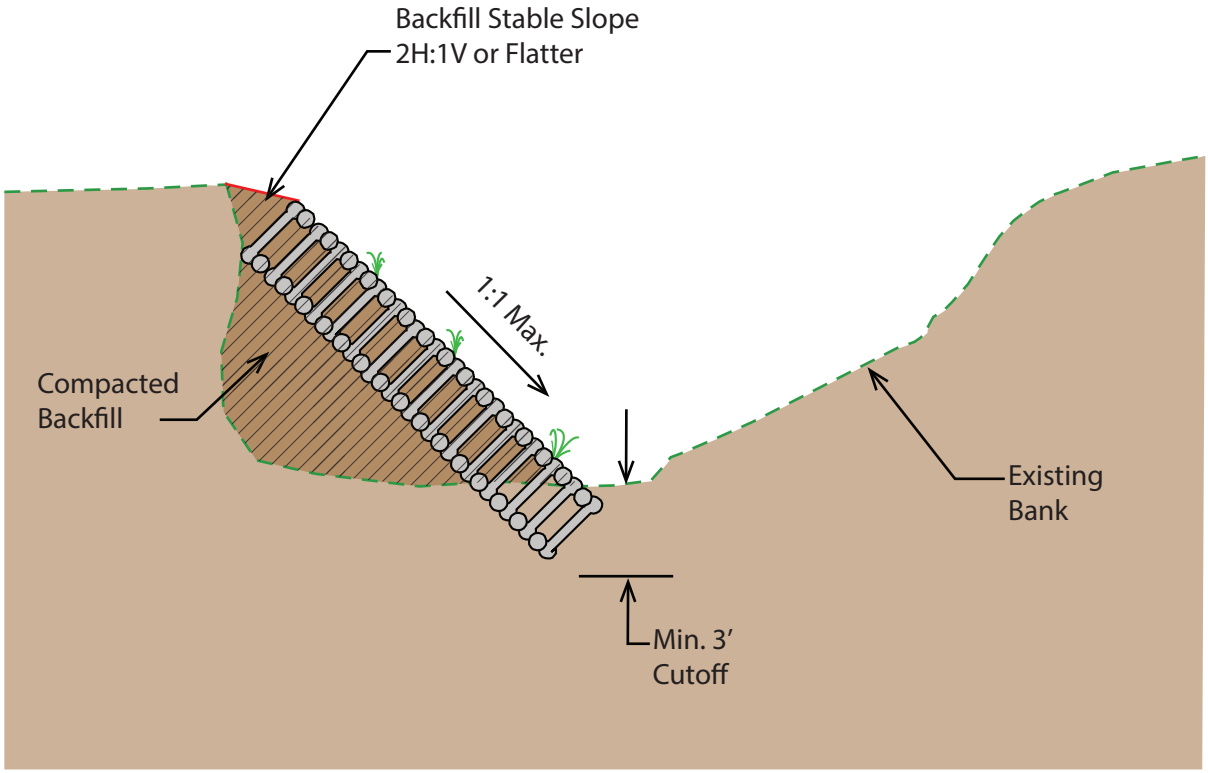
A typical planting plan is illustrated in Figure 10-1 of the Program Manual. Plantings will be installed as follows: Plant palette will be based on an evaluation of vegetation communities up and down stream of the repair site. A mix of tree, shrub, and herbaceous species will be selected as appropriate from the SMP Table 10-5. Grass species utilized will be SCVWD Erosion Control Mix per Table 10-5. An as-built planting plan diagram (to scale) and plant list will be provided to the permitting agencies.

Herbaceous species:	4 feet average on-center
Shrub species:	8 feet average on-center
Tree species:	12 feet average on-center
Live stakes/cuttings:	2 feet average on-center

HABITAT IMPACT ASSESSMENT

Channel bottom:	Permanent impact
Bank:	Permanent Impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.



SECTION

Source: Updated by Montrose, 2023

#11: SACKED CONCRETE

DESCRIPTION

Sacked concrete slope protection (SCSP) consists of burlap bags filled with concrete and placed against channel banks. SCSP requires a three-foot deep concrete or SCSP cutoff wall at the base of the slope to prevent failure. SCSP does not provide any revegetation potential. However, it offers the opportunity to contour walls such that impacts to existing vegetation are avoided

DESIGN CRITERIA

Appropriate for slopes up to 0.5:1.

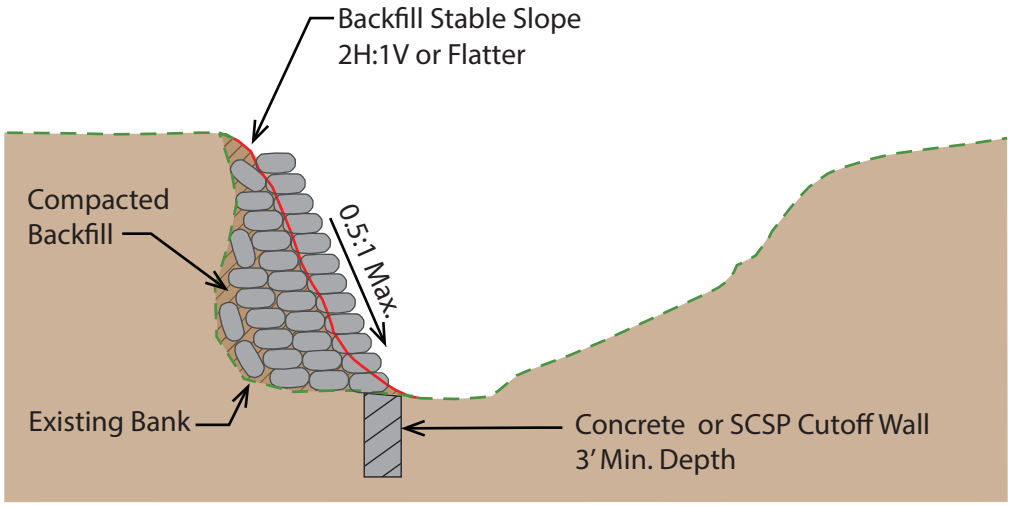
Appropriate for velocities up to 15 feet per second.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Permanent impact
Bank:	Permanent impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.



SECTION

Source: Updated by Montrose, 2023

#12: GUNITE SLOPE PROTECTION

DESCRIPTION

Gunite slope protection consists of a concrete mixture sprayed under pressure oven an eroded bank. Reinforcing steel may be placed against the bank prior to spraying.

DESIGN CRITERIA

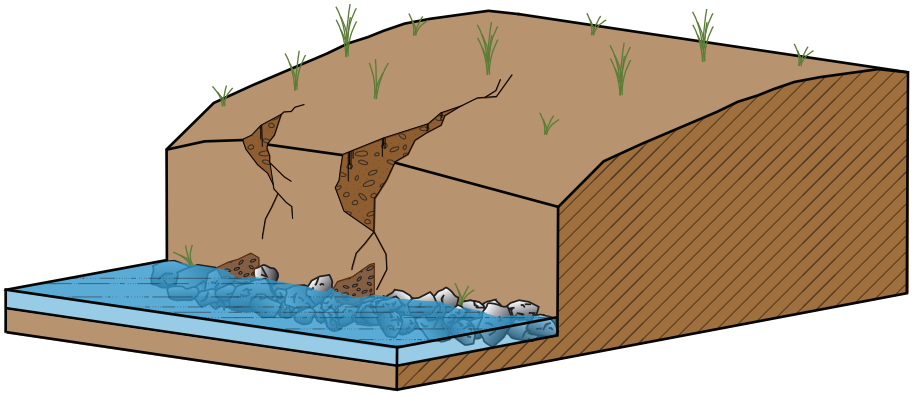
Appropriate for slopes up to 0.1:1 (near vertical). Appropriate for velocities up to 15 feet per second.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.

HABITAT IMPACT ASSESSMENT

Channel bottom:	Permanent impact
Bank:	Permanent impact

Mitigation: Off-site as specified in Table 10-4 and the SMP permits.



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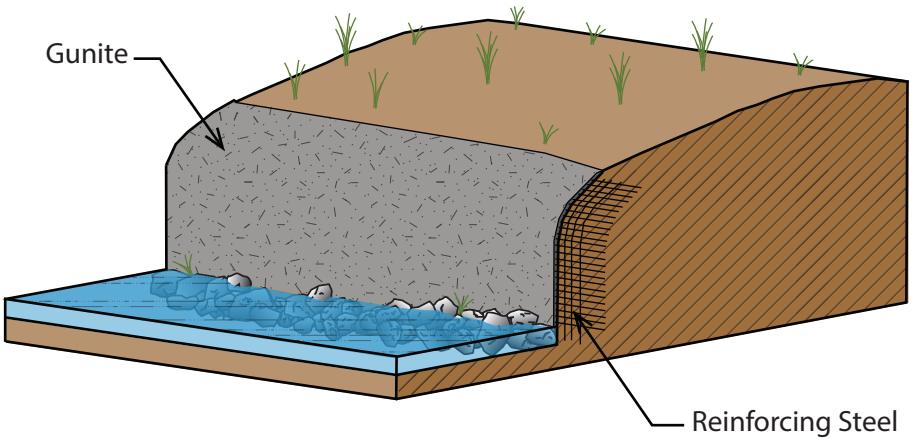


AFTER

Source: Montrose, 2023

#13: SOLDIER PILE & SHEET PILE RETAINING SYSTEMS

DESCRIPTION

Soldier pile and sheet pile walls are used by Valley Water to stabilize and repair eroding streambanks. Soldier pile walls use vertical steel beams, with wood or concrete lagging between the vertical beams to create the wall. Sheet piles use steel sheets inserted into the earth to serve as the wall. These walls can be used for temporary or permanent stabilization and repair. These walls are designed using soil, geotechnical, hydrology, and hydraulic data, as well as, site specific topographic information.

Valley Water installs steel sheet piles using a hydraulic press system that reduces noise and vibration by pressing the piles into the ground to the designed elevation below the channel invert (lowest channel bed depth). Installing soldier piles includes drilling to the design depth, installing the steel beams, and then backfilling with concrete to the bottom channel elevation. Lagging (precast concrete or wood) is placed between the soldier piles from the top of the creek banks to retain the earthen slope behind the wall.

A key advantage of these solutions is their narrow footprint which helps where the channel corridor is narrow and the available right-of-way is limited. It is also helpful near buildings, roads, bridges, trails, etc. Importantly, these systems allow for immediate load-carrying capacity and can be used as a curtain wall to contain the working site in a safe manner. Where erosion is active, these retaining wall systems can limit further erosion. When left exposed after construction, soldier pile and sheet pile repair methods do not provide any revegetation potential. However, they offer the opportunity to repair and reconstruct the streambank slope using earthen backfill which can support vegetation and can help reduce or offset impacts to habitat.

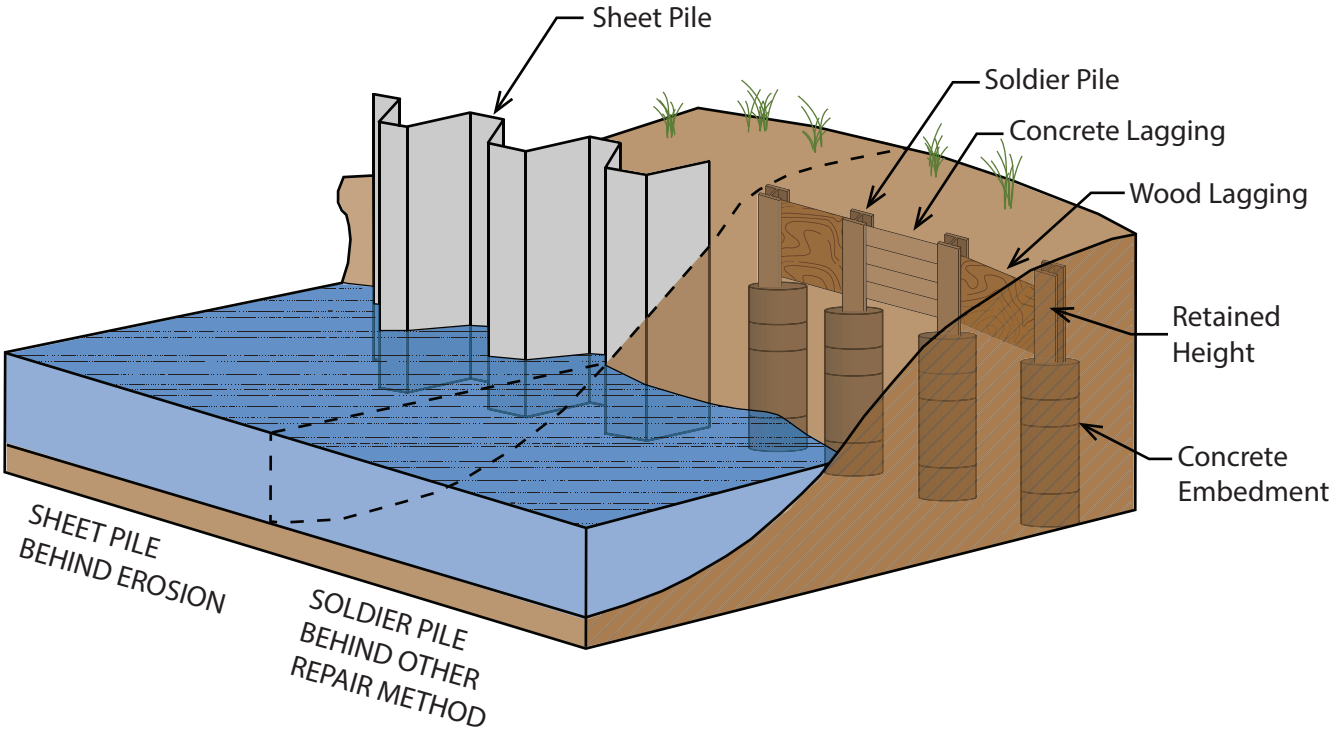
The following equipment could be used during construction: drill rig, augers, backhoe, excavator, loader, concrete pump, pile press, crane, concrete saws, jackhammers, dump trucks, water trucks, flat-bed trucks, vacuum trucks, pick-up trucks, compressors, and generators.

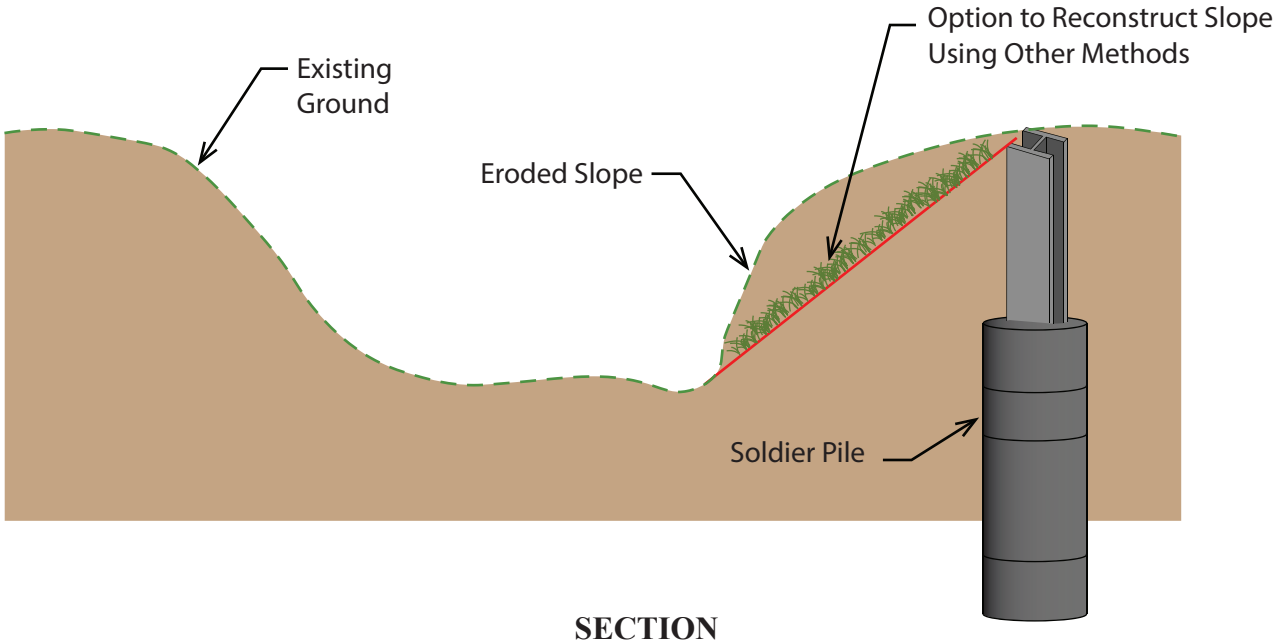
DESIGN CRITERIA

Appropriate for slopes up to 0:1 (vertical).

Appropriate for velocities up to 15 feet per second.

Note: Slopes and velocities are intended to be used as guides (and are not prescriptive), and therefore, methods may be adjusted based on site conditions and other factors.





SECTION

Source: Updated by Montrose, 2023

ATTACHMENT E

Water Quality Monitoring Plan

WATER QUALITY MONITORING PLAN

FOR THE
SANTA CLARA VALLEY WATER DISTRICT
MULTI-YEAR STREAM MAINTENANCE PROGRAM

Revised by

Carole Foster
Project Manager
Stream Maintenance Program Unit

Scott Akin
Environmental Services Manager
Stream Maintenance Program Unit

Under the Direction of

Sue Tippets
Deputy Operating Officer
Watersheds Operation and Maintenance Division

October 2018

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1.0 Introduction

The purpose of the Stream Maintenance Program (SMP) is to alleviate local flooding problems and to meet the requirements of the Federal Emergency Management Agency for flood protection. To ensure compliance with the San Francisco Bay and Central Coast Regional Water Quality Control Board's (Water Boards) Waste Discharge Requirements (WDRs) and Water Quality Certifications (WQCs), field water quality parameters will be measured/observed by the Santa Clara Valley Water District (District), or its designated water quality monitoring contractor, during SMP operations using active diversions, which include pH, turbidity, temperature and dissolved oxygen. This plan has been revised based on field conditions encountered during the years of operation of the SMP.

2.0 Purpose

The purpose of the Water Quality Monitoring Plan (Plan) is to verify and document compliance with the requirements and prohibitions established by the Water Board as specified in the WDRs/WQCs. This includes field/data reporting forms, sample collection, and formal reports to the Water Boards. A water quality monitoring report will be submitted to the Water Boards and other agencies/organizations (if requested) after the completion of each year's active diversion operations, in accordance with the Water Board's WDRs/WQCs.

3.0 Scope

The scope of this plan is to outline the process, means, and verification of monitoring water quality during SMP projects that use active diversions for all four authorized types of construction (Bank Stabilization, Minor Maintenance, Vegetation Management and Sediment Removal).

4.0 Definition of Terms

Actual discharge: an active, non-stormwater discharge of sediment, sediment-laden water, and/or construction related materials from the **active site** to the **receiving water.**

Grab sample: an individual sample collected in a short period of time not exceeding 15 minutes. They are to be used primarily in determining compliance with effluent and receiving water limits. Grab samples only represent the condition that exists at the time the water and effluent are collected.

Point of discharge: the location point at which water diverted around the active site is discharged into **tidal or non-tidal** waters of the State.

Active site: the confine of a SMP activity occurring on a waterway in which a pump is being used to divert water around the project site.

Duly authorized representative: one who

a. Authorization is made in writing by a principal executive officer, or

b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity (e.g., field supervisor, project manager, chief engineer).

Downstream discharge/Effluent water: the water that flows out of a diversion, the discharged water (passive or active diversion).

Upstream water: water from a river or stream that is being diverted around a project site, from the upper end of the project site.

Receiving water: any water body that actually or potentially receives surface or ground water at the point of discharge, which passes over, through, or under dredged sediment during placement, dewatering, settling/consolidation, and excavation/removal activities – the water body that receives the discharge.

Active diversion: any method of diverting water around a project site other than non-mechanical means.

Passive diversion: the method of diverting water around a project site using no mechanical means. As well, working in channel where the project is being conducted outside of the live stream because of a natural buffer, such as excavating in pockets of sediment, will be considered a passive diversion.

5.0 Specifications for Sampling and Analyses

The District, or its designated water quality monitoring contractor**,** will perform sampling and analyses in accordance with the following conditions and requirements included in the WDRs/WQCs issued by the Water Board. Two types of data collection will be conducted at the sites - water quality observations and water quality analyses using field instruments. No laboratory analyses will be conducted.

5.1 Water Quality Standard Observations

Standard observations of surface water conditions shall be conducted upstream and downstream of the active project area to visually detect impacts of the water diversion. The following standard observations of the receiving waters will be collected on every day of operation on the field reporting form (Appendix A):

1. Floating and suspended materials of waste origin (to include, but not limited to, oil, grease, or other material that may come from the diversion/project site) presence or absence and size of the affected area.
2. Discoloration and turbidity: description of color, source, distance of travel and wind direction.

3. Odor: presence or absence, characterization, source, distance of travel, and wind direction.
4. Hydrographic condition including: depth of water columns, sampling depths, time and height of corrected low and high tides.
5. Weather condition including: air temperature, wind direction and velocity (speed), and precipitation.

5.2 Water Quality Analysis using Field Instruments

5.2.1 Water Quality Testing

Water Quality data will be collected by direct immersion of the instrument probe into the water column, or directly immersed into collection apparatus. The sample will be immediately analyzed on site for constituents in Table 1. Samples shall be collected with accurately calibrated field measurement instrument(s) and the results logged.

Table 1

Constituents	**Type of Sample**	**Units**
Turbidity	Grab/Dip	NTUs
pH	Grab/Dip	Not Applicable
Dissolved Oxygen	Grab/Dip	mg/l
Temperature	Grab/Dip	Degrees Fahrenheit

5.2.2 Water Quality Testing Locations

Samples will be collected at a distance of 100 feet (or at a location that is most representative of the typical undisturbed condition) upstream of the beginning of the active diversion and 100 feet (or at a location that is most representative of surface water affected by the diversion) directly downstream from the point of discharge into the receiving water of the non-tidal sites. For tidal sites, water samples will be collected only at the point of discharge on the receiving waters (with no upstream collection). The samples will not be taken during a rainstorm event or subsequent runoff event. For sites that straddle both freshwater and tidal areas, tidal sampling protocol will be followed. Samples of the discharge from temporary storage sites (if utilized) are to be collected as near as possible to the point of discharge without compromising the safety of personnel. Wherever possible, the probes will collect data from 1 foot below the surface (tidal and non-tidal sites).

5.2.3 Water Quality Testing Frequency

At every active diversion site, water quality samples shall be collected at least twice daily. Each sample set collected at the upstream and downstream locations must be taken within no more than a half an hour of each other (unless limiting circumstance exists, such as creek access over long creek reaches).

5.2.3a Background Sampling (pre-construction baseline sampling)

Prior to the installation of an active diversion and/or its components, at least one (1) day of background water samples (two samples per day evenly spaced during working hours) will be collected from the established testing locations. If there is a change in stream conditions (e.g., storm event) while there is a shutdown of the active diversion, new baseline sampling shall be conducted.

5.2.3b Operational Sampling

Water quality samples will be collected from the established testing locations at the active diversion sites, at least two (2) samples per day, evenly spaced during the work hours, with the first sample collected no earlier than one (1) hour after work has commenced each day.

5.2.3c Unauthorized Actual Discharge Sampling

In the event of an unauthorized actual discharge of sediment-laden or otherwise contaminated water (either observed directly or evidence thereof) from the active site to the receiving water, water quality samples will be collected as soon as practicable from the established testing locations at the active diversion sites. If no exceedances are detected, monitoring may return to operational sampling frequency. If exceedances are detected, sampling will continue to occur every two (2) hours until the exceedance has been corrected.

5.2.3d Background Sampling (post-construction baseline sampling)

After the removal of an active diversion and/or its components (either/or when pumps are shutoff and water is reintroduced into the project site), at least one (1) day of background water samples (two samples per day evenly spaced during working hours) will be collected from the established testing locations. The samples will be representative of typical undisturbed conditions and will not be taken during a rainstorm or subsequent runoff event.

5.2.3e Stock Pile Sampling

Water draining from a temporary sediment stockpile will be sampled on every day that there is a discharge which enters into a live stream. Sampling will be conducted at all points of discharge/runoff. Stockpile(s) must meet SMP Best Management Practices and San Francisco Bay/Central Coast Regional Water Quality Control Boards – Permit Condition standards. The sample will be immediately analyzed on site for constituents in Table 1.

5.2.4 Exceedances

5.2.4a What is an Exceedance?

An exceedance is where the receiving (downstream) water quality sample result for constituent(s) analyzed on site show an exceedance of the upstream water sample results, as specified in Table 2.

TABLE 2

Parameter	**Exceedance Limit**
pH	>0.5 units deviation from background (upstream)
Dissolved Oxygen	minimum of 5.0 mg/l for tidal waters or non-tidal warm water Minimum 7.0 mg/l for non-tidal cold waters *or* no change if background <5.0 mg/l
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.
Temperature	The temperature of any cold or warm freshwater habitat shall not be increased by more than 5°F (2.8°C) above the natural receiving water temperature.

5.2.4b What to do if there is an Exceedance

If any water quality monitoring sample results in an exceedance, then the District will implement the following process to correct the exceedance:

1. Upon discovery of an exceedance, the District shall identify the source of the exceedance and immediately implement procedures to correct the source of the exceedance. Equipment and supplies shall be on-site (or readily available nearby) that could be quickly deployed to provide additional filtration if turbidity is observed. These supplies may include the following options: bladders for settling, filter bags and pumps, silt filter dams, or silt barrier as appropriate depending on site conditions.
2. A report to the Water Board case manager shall be made by telephone of any exceedances of whatever origin immediately after it is discovered.
3. Confirmation samples will be taken within two (2) hours following the exceedance.
4. The District shall stop all work at the site for exceedances lasting longer than two hours. The District shall update the Water Board staff of site conditions and the corrective actions that are taken.

5. Sampling every 2 hours will continue until the exceedance has been corrected. All constituents will continue to be monitored.
6. If all exceedances have been eliminated within four (4) hours of confirmation, work may proceed at the site, and the Regional Board case manager will be notified.
7. Region 3 Water Board staff will be notified promptly, and in no case more than 24 hours, after the unauthorized discharge or water quality problem arises.
8. The District shall notify Region 2 Water Board staff in writing within five calendar days of all exceedances. An electronic mail report shall include the following information: time and date of incident, duration, estimate of discharge or bypass volume exceedance, and documentation of sampling results/observations determining compliance status. The report shall also include detailed discussion of reasons for non-compliance, and specific steps that were or will be taken to correct the failure and prevent it from reoccurring.

5.2.4c Exceedance Reporting

A report to the Executive Officer and Water Board case manager shall be made by telephone of any exceedances of whatever origin immediately after it is discovered. A written report shall be filed with the Water Board within five calendar days and shall include the following information:

a. A map showing the location(s) of exceedances(s);
b. Approximate flow rate;
c. Nature of effects, i.e., all pertinent observations and analyses; and
d. Corrective measures underway or proposed.

5.3 Records to be Maintained

Written reports, calibration and maintenance records, and other records shall be maintained by the District and accessible at all times. Records shall be kept at the District for a minimum of 5 years. This period of retention shall be extended during the course of any unresolved litigation regarding this exceedance or when requested by the Water Board. Records shall include notes and observations for each sample as follows:

a. Identification of sampling site by creek name, cross street, and item number (if available from the annual reports).

b. Date and time of sampling.

c. Date and time analyses are started and completed and the name of person conducting analyses.

f. Data and results of analyses and/or observations.

Records shall include a map or maps of the site showing the location of the project(s) and water sampling locations, coffer dams, discharge pipes, access ramps, etc.

6.0 Quality Assurance and Quality Control

The QA/QC portion of the WDRs is an important component of the Plan involving, at the core of compliance, quality assurance of field sampling. As such, this section describes the two major elements of the QA/QC plan which are (1) field sampling to ensure compliance with WDRs criteria and (2) reporting of that compliance.

District utilizes sampling contractors and/or internal staff to conduct water quality sampling for the SMP projects. These monitors will use District approved field sampling instruments and sampling equipment. As field sampling is the ultimate means of ensuring compliance with WDRs requirements, it is imperative to have operating procedures that show the field sampling is being conducted in a manner that will collect analysis in an accurate way. In order to do this, the following criteria must be followed:

1. All personnel conducting water quality monitoring must read the relevant SMP best management practices, this Plan, the Water Board's current SMP WDRs/WQCs, and manufacture calibration/instruction manuals for all sampling instruments used.
2. The SMP Project Manager must train personnel conducting this activity on all aspects of water quality monitoring.
3. Verification document signed that the relevant documents have been read and additional training has occurred.

All this documentation will be held with the SMP Project Manager (PM), for a period of five years. Further, all equipment will be tested and calibrated, in accordance with the equipment's manufacture requirements, at least once a week to ensure the instruments are in proper working condition.

The reporting of the compliance/non-compliance of each project meeting the WDRs/WQCs criteria is captured in an end of season report that is submitted to the Water Board, see Final Water Quality Monitoring Report, attachments to the WDR and the District's SMP Program Manual.

7.0 Reporting

7.1 Responsible Entity

The SMP PM is responsible for implementing this Plan as required in the WDRs/WQCs issued by the Water Boards for the SMP. The PM will evaluate the data for compliance with the requirements of the WDRs/WQCs and will inform the Watershed Field Operations staff or contractor of any non-compliance event in order for them to take immediate corrective action.

7.2 Reports to the Water Board

Permit Exceedances

The District shall notify the Water Board staff in electronic mail within five calendar days of all exceedances. Written reports shall include time and date of incident, duration, estimate of discharge or bypass volume exceedances, and documentation of sampling results/observations determining compliance status. The report shall also include detailed discussions of reasons for non-compliance and specific steps that were or will be taken to correct the failure and prevent it from re-occurring.

7.3 Final Monitoring Report

Upon completion of active diversion activities, an annual monitoring report will be filed with the SMP Annual Summary Report (ASR).

The final monitoring report will include:

1. Certification Statement
2. Introduction
3. Compliance Summary
4. Purpose and Scope
5. Description of Work Performed
6. Water Quality Sampling Data by Individual Site
7. Maps – County level showing where monitoring activities occurred

Embedded within these sections:

1. A transmittal letter which includes a summary of all violations of WDRs/WQCs, any changes to the project design, and any unplanned releases or failures that occurred during the active diversion operations.
2. The report shall provide: the magnitude of the releases or failures; any discharge limit exceedances; dates of all exceedances, cause of the failure, releases or other violations; any corrective actions taken or planned; and the dates of completion of corrective action.

Field Reporting Forms

APPENDIX A

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Stream Maintenance Program Data Reporting Form

Creek Name/Item Number	Sample Date/Time	Direction	Turbidity	Dissolved Oxygen	pH	Temperature	Activity Monitored

Stream Maintenance Program Calibration Form

Instrument Identification	Time of Calibration	Date of Calibration	Issues

Field Observation Reporting Form

Site Information

Site Name	Site Location	Date

Standard Observations

Weather

Air Temperature	Precipitation (Heavy/Light)	Wind Direction/Speed

Visual

Floating Suspended Materials — Present Absent

Turbidity/Discoloration — Present Absent

Water Depth — U/S D/S

If present, what is the suspected source?

If present, Site Foreman Notified? _____ Time/Name_____

Odor

Present Absent

If present, describe suspected source and estimate of affected area (wind direction and travel distance)

If present, Site Foreman Notified? _____ Time/Name_____

Flow (FOR NON TIDAL SITES)

Estimated rate (cubic feet per second)

Tides (FOR TIDAL SITES) from NOAA tide chart

Time	Height

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ATTACHMENT F

Sediment Characterization Plan

SEDIMENT CHARACTERIZATION PLAN

FOR THE
SANTA CLARA VALLEY WATER DISTRICT
MULTI-YEAR STREAM MAINTENANCE PROGRAM

Revised by

Carole Foster
Project Manager
Stream Maintenance Program Unit

Scott Akin
Environmental Services Manager
Stream Maintenance Program Unit

Under the Direction of

Sue Tippets
Deputy Operating Officer
Watershed Operations and Maintenance Division

December 2019

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1.0 Introduction

The Santa Clara Valley Water District (Valley Water) conducts sediment removal, vegetation management, bank protection repairs, minor maintenance, and canal maintenance activities in channels/creeks for the purpose of alleviating the potential for local flooding problems and to meet the requirements of the Federal Emergency Management Agency for flood protection. Under the aforementioned activities of the Multi-Year Stream Maintenance Program (SMP), channel/creek sediment is often removed as a result of these activities. In order to effectively manage the removal and disposal of the sediments removed as a result of these activities, it is necessary to characterize the chemical and physical properties of the sediments (or also known as creek material as some of the tested material is from the creek banks or stockpiles, etc.). This characterization allows Valley Water to (1) effectively plan for disposal of the sediments and (2) assist with determining the best management practices (BMP) to implement in order to avoid and minimize impacts to water quality, aquatic life, and Beneficial Uses as specified in the San Francisco Bay and Central Coast Regional Water Quality Control Boards' (Water Boards) Basin Plans. The sediment characterization plan proposed for Valley Water's SMP, as presented herein, is a result of Valley Water's sediment testing and evaluation effort, and continuous improvement process based on guidance from regulatory agencies and other stakeholders, since 1997.

2.0 Purpose

According to the Basin Plans, the Water Boards establish and enforce Waste Discharge Requirements (WDRs) for point and nonpoint source of pollutants at levels necessary to meet numerical and narrative water quality objectives. The sediment tests performed by Valley Water each year as part of its SMP are based on the historic occurrence of pollutants within Santa Clara Valley streams, in accordance with the Basin Plans' water quality objectives, and the Water Boards' WDR through a stakeholder process. The stakeholder process and lessons learned meetings involved participation of the Water Boards, the California Department of Fish and Wildlife (DFW), the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (Corps), and various environmental organizations which assisted Valley Water in continuous evaluation and improvement of the sediment characterization plan.

There are four main reasons for characterizing the sediments described as follows:

Landfill Acceptance

Landfills require creek sediment to be characterized before they accept the material for disposal.

Reuse Sites

An evaluation of test results is conducted for the placement of excavated materials in beneficial reuse sites. The beneficial reuse options include wetland creation and restoration, levee maintenance, and construction fill. Material reused within the 500 feet upstream or downstream is done without sediment testing with prior approval by the Regional Water Boards. Off-site construction fill also requires prior approval by the Regional Water Boards.

The San Francisco and Central Coast Regional Water Quality Control Boards

The Water Boards have required characterization of the materials to determine if the proposed disposal method is acceptable. The Water Boards must ensure that the disposal of the material will not pose a threat to the waters of the State. The Water Boards are interested in determination of total mercury and polychlorinated biphenyls (PCBs) in residual sediment after sediment removal.

The California Department of Fish and Wildlife

DFW requests that the materials be characterized to determine if they will adversely impact fish and wildlife as the removal operations may cause sediments to be re-suspended and migrate downstream where it may have an impact on fish and wildlife. DFW defers to the Water Boards for the determination of suitability for creek material removal.

3.0 Scope

Under the SMP, sediment will be tested using the San Francisco Bay Regional Water Quality Control Board's Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines (May 2000) to facilitate any beneficial reuse of sediment generated by Valley Water. The physical and chemical properties of sediments tested by Valley Water include metals, pesticides and organophosphorous compounds, polychlorinated biphenyls, polynuclear aromatic hydrocarbons, moisture content, chloride, pH, total sulfides, ammonia, and toxicity (as described below).

This sampling plan documents sampling and analytical procedures which will be utilized for the creek sites under the SMP. It is not intended to be a full characterization of all the stream sediments. The Sediment Characterization Plan is primarily designed to characterize sediment designated for removal (using composite, continuous core and residual sediment sampling methods). Residual sediment samples will only be collected in an attempt to characterize the sediment that may be subject to erosion and transport during flows.

The Sediment Characterization Plan addresses the following sampling methods designed to meet the overall objectives of landfill acceptance, sediment reuse sites, water quality protection, and fish and wildlife protection:

1. Composite sediment sampling
2. Continuous Core sampling
3. Residual sediment sampling

Additional testing and/or alternate sampling methods may be conducted to meet Quality Assurance Project Plan (QAPP) requirements for sediment reuse for specific levee maintenance or marsh restoration projects, such as the South Bay Salt Pond Restoration Project and the South San Francisco Bay Shoreline Project. Specific project QAPPs may require oversight of the sediment screening process and import of materials by an independent Quality Assurance Officer (QAO). In some cases, the QAO may have the authority to approve reuse of materials if the sediment was tested according to QAPP guidelines and test results are below QAPP screening criteria. Any deviation from QAPP guidelines requires reuse approval from the Water Board.

4.0 Objectives

The specific objectives of the Sediment Characterization Plan are as follows:

1. Characterize the sediments for acceptance by landfills.

2. Characterize the sediments to determine their suitability for beneficial reuse (i.e., non-landfill reuse sites).

3. Compliance with regulatory requirements for the sediment removal activities.

4. Provide data for evaluation of the feasibility of long-term disposal, reuse, and recycling opportunities for sediment generated by Valley Water.

5.0 Sampling Methods and Procedures

This section describes the frequency of sampling and the location of sample collection at the SMP sites involving sediment removal activities. From both the regulatory and scientific perspectives, the primary objectives of a sampling plan for a solid material are twofold: namely, (1) to collect samples that are representative samples as exhibiting average properties of the whole solid material and (2) to collect samples that will allow measurements of the chemical properties of the waste that are both accurate and precise.

Sediment samples will be collected for characterization of sediment designated for removal and analyzed in accordance with the contaminants listed in Table 4: Recommended Sediment Chemistry Screening Guidelines for Beneficial Reuse of Dredged Material (Re-use Guidelines) from the Water Board's Basin Plan (see below). Sampling parameters/analytes listed in Table 4 may be modified after a history of sampling is obtained. This may result in not requiring monitoring for some of these contaminants under certain situations or at certain locations, or adding more parameters/analytes if deemed necessary by the Executive Officer of the Water Board.

Reliable information concerning the chemical properties of a solid waste is needed for the purpose of comparing chemical properties with applicable regulatory thresholds. For chemical information to be reliable, it must be accurate and precise. Accuracy is usually achieved by incorporating some form of randomness into the selection process for the samples that generate the data. Precision is most often obtained by selecting an appropriate number of samples.

For this Sediment Characterization Plan, Valley Water will utilize a systematic random sampling technique generated by the sediment sampling database, in which all sampling points from a population are randomly selected. The advantages of systematic random sampling over other sampling techniques are the ease with which samples are identified, and collected, an increase in precision, and to collect representative data on chemical properties. All samples shall be collected in accordance with the most recent U.S. EPA Guidelines and sampling methodologies. The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than U.S. EPA – approved methods of Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer of the Water Board.

The following techniques provide a general sampling approach and will suffice for most projects. Where these techniques would not provide a representative sample of the project area, Water Board staff will be consulted to provide additional sampling direction.

5.1 Composite Sediment Samples

The purpose of composite sediment sampling is to conduct the widest range of characterization along the project sites' lengths and widths in order to capture the most variation of the area. This broader scope of randomly generated 4 point sampling will give a greater sense of the variability of the channel material than a specific sample point.

5.1.1 Composite Sample Collection Frequency

In order to characterize the sediment, one composite in-situ sample consisting of 4 random samples shall be collected and analyzed approximately every 4,000 cubic yards. Approximately one sample shall be collected every 1,000 cubic yards. These samples will be composited together by the laboratory. The length of the channel is also taken into consideration as Valley Water's database will generate sampling points based on the length of the project area. As such, projects with long project lengths will have sample points farther apart in order to better characterize the variability in sediment contaminants along the entire length of the worksite.

5.1.2 Composite Sample Locations

The location of each sample at the Sediment Removal Program sites must be selected in the following three dimensions: (1) the creek station, or the location along the length of the creek; (2) the location along the creek cross section; and (3) the depth below ground surface (bgs). With these parameters, a sample point is randomly generated. The rationale for selection of a sampling location in all three dimensions is described below:

5.1.3 Composite Sample Depth

The sampling depth of the composite samples are also randomly generated, varying from surface sampling to maximum excavation depth of the proposed project.

5.2 Continuous Core Sediment Samples

The purpose of continuous core sampling is to take samples at selected locations (e.g. below outfalls, depression areas of the creek, likely contaminated areas) where the highest likelihood of contamination exists in the project site. This type of sample is not taken on the banks (above the toe of the channel) nor from stockpiles, only from within toe to toe of the channel.

5.2.1 Continuous Core Sample Collection Frequency

One continuous core sample is taken every 4000 cubic yards per project site.

5.2.2 Continuous Core Sample Locations

The location of the sample is determined in the field upon attempting to locate areas of depression or outfalls within the project site. As these features are not always apparent, the location will sometimes have to be placed in the most likely areas of these features.

5.2.3 Continuous Core Sample Depth

The depth of the sample is randomly generated by Valley Water's sediment

sampling database and printed on the sediment sampling plan generated in the office and used out in the field.

5.3 Residual Sediment Samples

The purpose of residual sediment sampling is to conduct limited characterization of sediment left behind after sediment removal from earthen channels and creeks. The exposed sediment in the channel/creek bottom will only be sampled and analyzed for total mercury and PCBs. Contaminants that test above the Table 4 detection limits will be reported to the Water Board prior to sediment removal.

5.3.1 Residual Sample Collection Frequency

Residual sediment samples will be collected at one every 4000 cubic yards on earthen channels.

5.3.2 Residual Sample Locations

This type of sample will be collected at each earthen channel/creek site. The location of the residual sample will coincide with the continuous core sample.

5.3.3 Residual Sample Depth

The samples will be collected from within 1 foot below the planned maximum depth of excavation for that project.

5.4 Sample Collection

All samples shall be collected by means of a hand trowel, a hand auger, or another sampling method approved by the regulatory agencies. The individual collecting the sample will have the discretion of choosing the sampling method which is the most efficient to perform.

Sampling will be conducted in accordance with the methods described below:

5.4.1 Hand Trowel Procedure

1. Remove vegetation and woody debris from the ground surface.
2. If collecting a subsurface sample, use a shovel to dig down to the desired sampling interval.
3. Use a stainless-steel hand trowel to collect soil.
4. Place soil in an appropriate sampling container.
5. Replace all excavated soils to their original location (i.e., backfill the sampling hole).

5.4.2 Hand Auger Procedure

1. Remove vegetation and woody debris from the ground surface.

2. Use the hand auger to advance down to the top of the sampling interval.

3. Use a hand auger to collect soil from the desired depth.

4. Use a clean (decontaminated) tool to scoop the soil out of the auger and place in an appropriate sampling container.

5. Replace all excavated soils to their original location (i.e., backfill the sampling hole).

6. If hand auger refusal is encountered, sample will be collected from an alternate location.

5.5 Sample Containers and Sample Volumes

All samples shall be collected using wide-mouthed glass jars or other sampling containers as directed or supplied by the laboratory.

Sampling volume and number of containers necessary shall be specified by Valley Water's contract of internal laboratory. It is anticipated that multiple containers of sediment will need to be collected at each location.

5.6 Decontamination Procedures

All equipment used to collect soil samples (hand trowel or hand auger) shall be decontaminated prior to collecting each sample, on-site. Equipment shall be decontaminated by at least rinsing the equipment twice with water, drying and then visually inspecting to ensure that there are no residual particles from the previous sample. The final rinse shall be with
de-ionized or distilled water.

5.7 Sample Preservation

All samples shall be immediately preserved in accordance with the EPA sampling and testing procedures. This is most commonly done by placing the samples in an insulated cooler with ice. Samples may also be stored in a refrigerator.

The laboratory shall immediately record the temperature of the sample containers upon receipt of the samples, if required by the EPA sampling and testing procedures for the contaminants that are being analyzed.

5.8 Chain of Custody Procedures

Standard chain of custody procedures shall be used throughout the sampling collection procedures. A chain of custody shall be prepared for all samples. Each individual who has responsibility for the samples is required to sign the chain of custody upon relinquishing the samples to another party. The receiving party taking custody of samples shall also sign the chain of custody form.

When in the field, samples shall always be in sight of the individual responsible for the samples, or the samples shall be stored within a locked vehicle. If the samples are stored in an office prior to delivery to the laboratory, the samples shall be stored in a secure location. Applicable sample storage and preservation procedures shall be followed.

5.9 Survey of Sampling Locations

All sampling locations will be identified by Geographic Information System (GIS) or linear referencing creek route system stationing.

6.0 Analytical Procedures

Every sediment sample location, with the exception of residual samples, shall be sampled for the full list of parameters/analytes listed in Table 4 for the Reuse Guidelines. Sampling parameters/analytes listed in Table 4 may be modified after a history of sampling is obtained. This may result in not requiring monitoring for some of these contaminants under certain situations or at certain locations, or adding more parameters/analytes if deemed necessary by the Executive Officer.

6.1 Rational for Analytical Test Method Selection

The rationale used for selecting test methods is based largely on the laboratory's ability to meet the detection limit requirements listed in Table 4. All methods are EPA standards, but may vary from time to time (based on changes from the EPA). Although, the driving force behind the selection of the test methods will be Water Board's Re-use Guidelines. As stated earlier, additional testing and/or alternate sampling methods may be conducted to meet Quality Assurance Project Plan (QAPP) requirements for sediment reuse for specific levee maintenance or marsh restoration projects. QAPPs may require different (often lower) detection limit requirements.

6.1.1 Moisture Content

Sediments in creeks naturally contain moisture; moisture content may fluctuate during the year and is dependent on creek flows, groundwater elevation, and other local conditions. The moisture content of in-situ soils will be higher than the moisture content of excavated sediments, due to the natural process of evaporation and infiltration.

Analysis of moisture content is required for Class III landfill acceptance for wet soils. In addition, it is necessary to measure the moisture content in order to determine the dry weight concentrations of constituents within the sediment.

Selected Test Method and Frequency of Testing

All samples except residual sediment samples shall be analyzed for moisture content by EPA Method 160.3 or the most current prescribed method.

6.1.2 Toxicity

Creek sediments may be toxic due to nonpoint source pollutants which may have been deposited into the creeks. Toxicity is of concern if the sediment is to be reused.

Sediment toxicity test will be conducted only on composite samples from sites where the waters may not be controlled during sediment removal operations due to tidal action; therefore, toxicity sampling shall only be conducted on sediment removal projects which would not divert the water around the project site during excavation.

Selected Test Method and Frequency of Testing

All samples in tidal areas meeting the criteria stated above, except residual sediment samples, shall be tested for toxicity by means of a toxicity screening bioassay, by the test method specified in California Code of Regulations, Title 22. The samples will be tested using *Eohaustorius estuarius* species, unless otherwise specified by the EPA.

6.1.3 Methylmercury Testing

Past mining operations allowed mining tailing and debris discharge to some creeks, which increased mercury levels in sediments and soils in those watersheds, specifically the Guadalupe Watershed.

Selected Test Method and Frequency of Testing

Only the following creeks will be required to have the additional analysis of methylmercury be performed for all composite samples, in accordance with EPA 1630:

Alamitos Creek
Guadalupe Creek
Guadalupe River
Los Gatos Creek
Randol Creek.

7.0 Quality Control

A QA/QC plan is an important component of a monitoring program involving extensive field sampling and laboratory analyses. The two objectives of the QA/QC plan are: 1) to provide a means of ongoing control and evaluation of the sampling and analysis procedures; and 2) to quantify data precision and accuracy for use in data interpretation. Duplicate samples are no longer required. The QA/QC plan will be followed in all phases of the monitoring program including sampling and validation reporting. QA/QC requirements are noted below.

Valley Water will utilize a sampling contractor or internal staff to conduct field sampling. The assigned field staff and/or contractor will be responsible for managing all field sampling equipment. The actual assignment of sampling areas and analysis are given to the sampling staff by the Stream Maintenance Program Project Manager (PM). Verification of equipment, analysis, chain of custodies, etc. will also be conducted by the PM.

All equipment used for field sampling will be kept in good working order and as required, will be tested and/or calibrated before leaving the office. Verification of working order/calibration (if necessary) should be re-verified, visually, upon arrival at the site to ensure the instruments are in proper working condition.

8.0 Laboratory

Whichever laboratory is used to perform analysis under this sediment sampling plan must be certified by the State of California Department of Health Services under the Environmental Laboratory Accreditation Program. Sub-labs that are out of state must hold current certification in their state's accreditation program. Further, the contract lab is required to perform their own quality control tests with the results published in the final lab report.

9.0 Reporting

Upon receipt of the analytical results from the laboratory, Valley Water will submit the results to the Water Board and request approval for reuse as described below. Valley Water shall attempt to compile the results in 2 to 3 submittals to the Water Board.

1. For ease of review, only the contaminants that test above the Water Board's Table 4 detection limits will be reported to the Water Board.

2. The entirety of the results, for detected and non-detected, shall be maintained in Valley Water's database and made available upon request. Further, the signed lab copy of the results shall be maintained for no less than 3 years by Valley Water.

3. For project site sediments that are going to a landfill, the Water Board is only required to approve the removal of the material as the landfill will approve acceptance to their disposal facility.

Table 4: Recommended Sediment Chemistry Screening Guidelines for Beneficial Reuse of Dredged Material

ANALYTE	Wetland Surface Material		Wetland Foundation Material	
	Concentration	Decision Basis	Concentration	Decision Basis
METALS (mg/kg)				
Arsenic	15.3	Ambient Values	70	ER-M
Cadmium	0.33	Ambient Values	9.6	ER-M
Chromium	112	Ambient Values	370	ER-M
Copper	68.1	Ambient Values	270	ER-M
Lead	43.2	Ambient Values	218	ER-M
Mercury	0.43	Ambient Values	0.7	ER-M
Nickel	112	Ambient Values	120	ER-M
Selenium	0.64	Ambient Values		
Silver	0.58	Ambient Values	3.7	ER-M
Zinc	158	Ambient Values	410	ER-M
ORGANOCHLORINE PESTICIDES/PCBS (µg/kg)				
DDTS, sum	7.0	Ambient Values	46.1	ER-M
Chlordanes, sum	2.3	TEL	4.8	PEL
Dieldrin	0.72	TEL	4.3	PEL
Hexachlorocyclohexane, sum	0.78	Ambient Values		
Hexachlorobenzene	0.485	Ambient Values		
PCBs, sum	22.7	ER-L	180	ER-M
POLYCYCLIC AROMATIC HYDROCARBONS (µg/kg)				
PAHs, total	3,390	Ambient Values	44,792	ER-M
Low molecular weight PAHs, sum	434	Ambient Values	3,160	ER-M
High molecular weight PAHs, sum	3,060	Ambient Values	9,600	ER-M
1-Methylnaphthalene	12.1	Ambient Values		
1-Methylphenanthrene	31.7	Ambient Values		
2,3,5-Trimethylnaphthalene	9.8	Ambient Values		
2,6-Dimethylnaphthalene	12.1	Ambient Values		
2-Methylnaphthalene	19.4	Ambient Values	670	ER-M
2-Methylphenanthrene		Ambient Values		
3-Methylphenanthrene		Ambient Values		
Acenaphthene	26.0	Ambient Values	500	ER-M
Acenaphthylene	88.0	Ambient Values	640	ER-M
Anthracene	88.0	Ambient Values	1,100	ER-M
Benz(a)anthracene	412	Ambient Values	1,600	ER-M
Benzo(a)pyrene	371	Ambient Values	1,600	ER-M
Benzo(e)pyrene	294	Ambient Values		
Benzo(b)fluoranthene	371	Ambient Values		
Benzo(g,h,i)perylene	310	Ambient Values		
Benzo(k)fluoranthene	258	Ambient Values		
Biphenyl	12.9	Ambient Values		
Chrysene	289	Ambient Values	2,800	ER-M
Dibenz(a,h)anthracene	32.7	Ambient Values	260	ER-M
Fluoranthene	514	Ambient Values	5,100	ER-M
Fluorene	25.3	Ambient Values	540	ER-M
Indeno(1,2,3-c,d)pyrene	382	Ambient Values		
Naphthalene	55.8	Ambient Values	2,100	ER-M
Perylene	145	Ambient Values		
Phenanthrene	237	Ambient Values	1,500	ER-M
Pyrene	665	Ambient Values	2,600	ER-M

ATTACHMENT G

Steelhead Impact Minimization Measures

ATTACHMENT G
Steelhead Impact Minimization Measures

The following measures will be applied to sediment removal and bank stabilization projects that occur in anadromous salmonid channels. These measures will be performed in the anadromous salmonid streams within the SMP area (Table 1).

TABLE 1
Anadromous Salmonid Creeks
Within the Stream Maintenance Program Area

Central California Coast Steelhead Distribution in the Project Area

Creek/River	Upper Limit of Steelhead Distribution
Alamitos Creek	Almaden Dam
Arroyo Aguague[1]	Falls upstream from confluence with Upper Penitencia Creek
Calero Creek	Calero Dam
Coyote Creek	Leroy Anderson Dam
Guadalupe River/Creek	Guadalupe Dam
Los Gatos Creek	Camden Avenue Drop Structure
Los Trancos Creek[1]	Approximately 0.4 mile north of headwaters
San Francisquito Creek	Searsville Dam
Stevens Creek	Stevens Creek Dam
Upper Penitencia Creek	Cherry Flat Reservoir

South-Central California Coast Steelhead Distribution in the Project Area

Creek/River	Upper Limit of Steelhead Distribution
Bodfish Creek	Bodfish Creek Falls
Cedar Creek[1]	Approximately 3 miles north of Cedar Creek Boulder Falls #2
Little Arthur Creek[1]	Cement Dam (near Redwood Retreat Road crossing)
Llagas Creek	Chesbro Reservoir Dam
Pacheco Creek[1]	North Fork Dam
Pajaro River	Steelhead occur in all portions of the creek within Santa Clara County
Pescadero Creek[1]	Creek source
Tar Creek[1]	Southern end of Castro Valley approximately 1.8 river miles from source
Uvas/Carnadero Creek	Uvas Dam
South Fork Pacheco Creek[1]	South Fork Pacheco Creek Boulder Falls

[1] Although work is not expected on these creeks, they are within the SMP project area and are therefore included here.

1 MITIGATION SITE IDENTIFICATION

1.1 Coarse Sediment Augmentation Site Identification

The SCVWD will identify potential locations for gravel augmentation in salmonid occupied watersheds: Alamitos Creek, Guadalupe Creek, Los Gatos Creek, Guadalupe River, Upper Penitencia Creek, Coyote Creek, Stevens Creek, and San Francisquito Creek. The SCVWD will prepare design plans and will submit the plans as part of the Notice of Proposed Work for regulatory agency review and approval. Sites for coarse sediment augmentation may be combined with instream habitat mitigation sites. Sites for coarse sediment augmentation may occur in locations where finer sediments need to be removed.

1.2 Instream Habitat Complexity Mitigation Site Identification

The SCVWD will identify potential locations for instream habitat complexity in salmonid occupied watersheds: Alamitos Creek, Guadalupe Creek, Los Gatos Creek, Guadalupe River, Upper Penitencia Creek, Coyote Creek, Stevens Creek, and San Francisquito Creek. The SCVWD will prepare design plans and will submit the plans as part of the Notice of Proposed Work for regulatory agency review and approval. Sites for instream habitat complexity may be combined with coarse sediment augmentation mitigation sites.

1.3 Mitigation Plan Elements

The SCVWD will develop mitigation designs for coarse sediment augmentation and instream habitat complexity projects. Coarse sediment augmentation and instream habitat complexity features may be combined into the same project. Mitigation for course sediment augmentation and instream habitat complexity features may be incorporated as part of bank stabilization projects. The mitigation designs will include the objectives for each project. The specific information included in the mitigation designs will include: affected watershed, location (stream, reach), pre-project site assessment, methods for coarse sediment placement, timing of coarse sediment placement, dewatering plan (if needed), proposed success criteria, and a monitoring plan. The monitoring plan will establish the type of monitoring to be conducted, the timing of the monitoring to be conducted, the duration of the monitoring to be conducted and adaptive management alternatives if the success criteria are not met. The SCVWD will include coarse sediment augmentation projects and instream habitat complexity sites in the NPW prior to implementation.

Mitigation proposed on-site or within sites close to the project impact site, are desirable as they provide direct instream benefits close to the area of impact and are therefore replacing loss features within a similar channel reach in which they have been displaced. This provides a higher level of benefit to the species within that reach of channel. Sites will not be chosen for coarse sediment augmentation if sediment removal is anticipated to occur more than twice in the 10-year SMP-3. Mitigation credits and obligations for coarse sediment augmentation and instream habitat complexity features will be tracked for each watershed.

2 COARSE SEDIMENT AUGMENTATION

2.1 Project Assessments

2.1.1 Pre-Project Coarse Sediment Assessment

A qualified biologist will conduct a surface assessment of the affected reach of channel to determine the location and quantity of coarse sediment (gravel and cobble [12.5 to 250 mm in diameter]) that may be removed by the proposed project. The patches of coarse sediment that have a surface area equal to or greater than 10 square feet, and are also at least 0.5 feet thick, and contain more gravel than sand, will be mapped. The surface area of the patches of coarse sediment meeting these minimum measurements, will be multiplied by 1.5 feet to calculate the volume of coarse substrate to be mitigated. For coarse substrate within the project site, a map, diagram (i.e., hand sketch), or table will be prepared indicating the number and location of coarse sediment patches within the channel project site. Photographs of the project site will be taken to show the patches of coarse sediment areas. The pre-project assessment results will be submitted in the NPW.

Assessments will not be conducted at sediment removal projects at fish ladders, stream gauges, Sediment Depositional Reaches (SDRs), outfalls, or at sediment removal sites needed for fish passage.

2.1.2 Post–Project Coarse Sediment Assessment

At the completion of the sediment removal project, a qualified biologist will conduct a post-project assessment of the surface gravels within the project area using the same methods as the pre-project assessment to determine the amount of available sediment remaining onsite. For coarse substrate within the project site, a map, diagram (i.e., hand sketch), or table will be prepared indicating the number and location of coarse sediment patches within the channel. Photographs of the project site will be taken to show the patches of coarse sediment areas and will be submitted in the Annual Summary Report (ASR).

2.2 Coarse Sediment Impact Calculations

The volume of course sediment calculated in the pre-project assessment will be compared with the volume of course sediment calculated in the post-project assessment to determine the mitigation obligation or mitigation credit resulting from each project. Mitigation credits and obligations for coarse sediment augmentation will be tracked for each watershed.

2.3 Coarse Sediment Mitigation and Monitoring

Sites proposed for gravel augmentation will be included in the NPW. The sites selected for mitigation will be in the same watershed where the impact occurs. Mitigation may be provided prior to or within a year after an obligation for the removal of coarse sediment. Sites used for coarse sediment augmentation will be monitored according to the monitoring plan described in the approved design plans and submitted in the NPW for review.

3 INSTREAM HABITAT COMPLEXITY FEATURES

3.1 Project Assessments

3.1.1 Pre-Project Assessment of Instream Habitat Complexity Features

A habitat assessment will be conducted at sediment removal sites that occur below the bankfull elevation and at bank stabilization sites on salmonid streams. The habitat assessment will be conducted by a qualified biologist during the late winter or spring months. Habitat complexity features may include the following:

1. Channel bed area with large cobble (defined as substrate with a medium diameter of 6 to12 inches).

2. Boulders (defined as substrate with medium diameter of 12 inches or greater)

3. Shrub or tree root mass

4. Tree branches or collection of floating and submerged branches/vegetation (branches with diameter less than 12 inches, any length)

5. Large woody debris (greater than 12 inches in diameter, any length)

6. Undercut bank

7. Surface turbidity/bubble curtain

If the site is a perennial stream or contains water during the survey the qualified biologist will conduct a level 3 Habitat Typing (Flosi et al., 2010) methods. The habitat assessment area will include the entire proposed project site and extend upstream and downstream 5 times the in-channel width, or up to a maximum of 300 feet. The habitat complexity assessment will be conducted during the late winter or spring of the year. For habitat complexity features within the project site, a map, diagram (i.e, hand sketch), or table will be prepared listing each of the habitat features, the surface area, location and function. This includes all features within the SMP project site, both those that are expected to be impacted by the SMP activity and those not expected to be impacted. Photographs will also be taken of the site and features. The pre-project assessment results will be submitted in the NPW. If the site does not contain flowing water during the survey, a SCVWD biologist will assess the length of the project site to identify the above habitat complexity features.

Assessments will not be conducted at sediment removal projects at fish ladders, stream gauges, Sediment Depositional Reaches (SDRs), outfalls, or at sediment removal sites needed for fish passage.

3.1.2 Post-Project Habitat Complexity Features Assessment

Post project habitat complexity assessments for sediment removal will use the same methods as the pre-project assessment. A post project assessment will be conducted by a qualified biologist using level 3 Habitat Typing (Flosi et al., 2010) methods. The habitat assessment area

will be conducted along the length of the project site. The post project assessment will include sufficient documentation to determine the retention or loss of the pre-project habitat complexity. The post-project survey will also identify the habitat/bioengineering features of the project that have been installed/constructed to benefit aquatic habitat at the project site. A diagram (i.e., hand sketch) and photographs will be taken of the site and used to illustrate the conditions. The post-project assessment report will include a table identifying the habitat complexity feature, the surface area, location, and function of the habitat features on-site.

3.2 Instream Habitat Complexity Features Impact Calculations

If the pre-project survey indicates the potential loss of instream habitat complexity features, the surface area of the features, type of features, the location of the features in the channel and other characteristics will be used to estimate the area and value of features to be impacted. The total square feet of habitat complexity features impacted will be calculated. The quantity of instream habitat complexity features identified in the pre-project assessment will be compared with the quantity of instream habitat complexity features in the post-project assessment to determine the mitigation obligation or mitigation credit resulting from each project. Mitigation credits and obligations for instream habitat complexity features will be tracked for each watershed.

3.3 Instream Habitat Complexity Features Mitigation and Monitoring

Sites proposed for the installation of instream habitat complexity features will be included in the NPW. The sites selected for mitigation will be in the same watershed where the impact occurs. Mitigation may be provided prior to or within a year after an obligation for impacts for the loss of instream habitat complexity features. The habitat value of the mitigation installed within each watershed will be commensurate with the habitat value of the features impacted within that watershed. Sites used for mitigation credit for the installation of instream habitat complexity features will be monitored according to the monitoring plan developed per project site and described in the approved design plans.

ATTACHMENT H

Stream Maintenance Program Fish Ladder Inspection

ATTACHMENT H
Stream Maintenance Program Fish Ladder Inspection Form

Project Identification Number:
Creek Name:
GIS ID:
GIS Stationing:

1st Inspection Date:	**2nd Inspection Date**:
Overall description of the condition of the facility (baffles, pools, chute structure, etc.)	Overall description of the condition of the facility (baffles, pools, chute structure, etc.)
Proposed work to the actual structure	Was work performed from the 1st Inspection?
Estimated volume (cy) material to be removed within the ladder	How much material (cy) was removed within the ladder?
Estimated volume (cy) material to be removed within 100 feet upstream or downstream of the ladder	How much material (cy) was removed within 100 feet upstream or downstream of the ladder?
Water depth and velocity measurements (at the upstream entrance of the fish ladder)	Water depth and velocity measurements (at the upstream entrance of the fish ladder)

Stream Maintenance Program Fish Ladder Inspection Form

Attachment H

Condition of upstream access for fish, does any work need to be performed (excluding sediment removal)?	Was work performed from the 1st Inspection?
Condition of downstream access for fish, does any work need to be performed (excluding sediment removal)?	Was work performed from the 1st Inspection?
Do entry and terminal pools exist and what is the condition of them (estimated depth, area, etc.)?	Do entry and terminal pools exist and what is the condition of them (estimated depth, area, etc.)?
Do weir(s) exist 100 feet upstream or downstream of the fish ladder? What is the condition of the weir(s) and are they creating any issues for fish passage?	Any follow up needed/additional information from 1st inspection?
Fish Screens Only: Condition of or need for cleaning of Gates, Debris Racks, Control Systems, Screen Faces or Screen Cleaning Systems	Any follow up needed/additional information from 1st inspection?

Stream Maintenance Program Fish Ladder Inspection Form

Attachment H

1st Inspection Photos	2nd Inspection Photos
Upstream View	Upstream View
Downstream View	Downstream View

ATTACHMENT I

Annual Notification Report

Santa Clara Valley Water District



202X Notice of Proposed Work

Stream Maintenance Program

Prepared for:
[Resource Agencies]

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Contact: Jon Jankovitz
(408) 265-2600

[date]

Santa Clara Valley Water District. 202X. 202X Notice of Proposed Work – Stream Maintenance Program. April.

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Appendix A…….. USACE Impact Table

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Section 1

Introduction

1.1 Introduction

[Brief paragraph summary of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program and purpose, referencing the SMP-3 Manual]. Include statement stating that the notification has been prepared for Valley Water's proposed 202X Maintenance Projects. Describe how the proposed activities were identified and prioritized (e.g., based on the maintenance triggers and purposes in Chapters 4 through 9 of the Manual). State that some projects require diversions and that a Diversion and Dewatering Plan will be included for these projects].

1.2 Proposed Maintenance Activities Summary

[Brief paragraph summary of the total number of 202X maintenance projects proposed. Subsections 1.2.1 through 1.2.5 summarize maintenance projects by activity type and the need for conducting maintenance. Section 1.3 includes a list of proposed projects, and Section 2 provides more details about maintenance work proposed by activity type.]

1.2.1 Vegetation Management

[Brief summary of vegetation management activities below top of bank, including vegetation removal <6" dbh, trees (>6" dbh) proposed for removal, and aquatic herbicide application. Generally, describe where pruning activities below OHW and mowing activities would take place in new work areas in sensitive habitats (e.g., wetlands or woody riparian vegetation). As appropriate, VW may refer to maps depicting where mowing, aquatic herbicide application, and pruning work are projected to occur. Describe generally what the work entails, primary maintenance needs, and list maintenance triggers that have been met. [Cross-reference Manual as applicable.]

1.2.2 Sediment Removal

[Brief summary of proposed sediment removal activities in Valley Water creeks, channels, and detention basins. Describe generally what the work entails, primary maintenance needs, and list maintenance triggers that have been met; cross-reference Manual as applicable.]

1.2.3 Bank Stabilization

[Brief summary of total number of bank stabilization projects and total mileage of combined bank repair projects (must be within 1 linear mile of channel)]. [Describe generally what the

work entails, the primary maintenance needs, and list maintenance triggers that have been met; cross-reference the Manual as applicable.]

1.2.4 Management of Animal Conflicts

[Brief summary of animal conflict management activities that would occur below the top of bank, including surface compaction of levee faces, filling burrows with soil or slurry, placement of physical barriers, beaver dam management, placement of bird nest deterrence for work area structures, bat exclusion (for the Upper Llagas Creek Flood Protection Project), and chemical control. Describe generally what the work entails, primary maintenance needs and list of maintenance triggers that have been met; cross-reference Manual as applicable.]

1.2.5 Minor Maintenance Activities

[Brief summary of minor maintenance activities that would have impacts on 0.01 acre or more of wetland or riparian vegetation per project or minor maintenance activities involving dewatering . Such activities include: minor sediment removal (< 25 cy per facility), trash and debris removal, fence and gate repair/installation, access road and ramp repair, in-kind replacement of structures (e.g., culverts, pipes), maintenance of restoration sites, maintenance of fish ladders that are not associated with a diversion, stream gauge maintenance, trash boom installation/maintenance, floodwall maintenance, work at maintenance yards, Palo Alto tide gates maintenance, and maintenance of passive flood barriers on Lower Penitencia Creek, stream gauge maintenance, minor erosion repair above OHW, and pier nose trash clean-up activities near bridges. Describe generally what work entails, primary maintenance needs, and list of maintenance triggers that have been met; cross-reference Manual as applicable.]

Non-Reporting Activities

[Brief summary of non-reporting maintenance activities. This generally includes pruning of overhanging growth from fence lines and along upper/lower maintenance roads, pruning of vegetation less than 0.01 acres, corrective pruning, coppicing, grazing, herbicide spraying on maintenance roads and revegetation sites, removal of dead/dying and downed vegetation on maintenance roads, mowing (unless in sensitive habitat), invasive plant removal, and non-lethal trapping of animals. Non-reporting activities would be tracked internally by Valley Water. Describe primary maintenance needs and list maintenance triggers that have been met; cross-reference Manual as applicable. Acknowledge that non-reporting activities are not discussed further in this report. Note that removal or cutting of LWD would be reported to resource agencies within one week of completion.]

1.3 Project List and Locations

The specific projects listed below are proposed for the 202X maintenance season. Tables 1-1 and 1-2 summarize the maintenance project locations and vegetation and tree removal activities. Valley Water's geospatial browser also shows that each maintenance location can be accessed at: [insert link]

- Tree Removal >6" dbh and vegetation removal <6" dbh Below Top of Bank (X Projects) [Tree removals >6" dbh and vegetation removal <6" dbh Below Top of Bank

projects can be consolidated and reported together as long as they are happening in the same geographic area and under the same work purpose]

- Sediment Removal (X Projects)
- Bank Stabilization (X Projects)
- Management of Animal Conflicts (X Projects)
- Minor Maintenance Activities with Impacts > 0.01 Acre of Wetland/Riparian Vegetation or Involve Dewatering (X Projects)

Table 1-1: Maintenance Project Site Locations

Site No.	Maintenance Site Name	City	Latitude	Longitude	Assessor's Parcel Number (APN)	Waterbody Affected	Basin
Sediment Removal							
Bank Stabilization							
Management of Animal Conflicts							
Minor Maintenance Activities							
Large Woody Debris Removal							

Table 1-2: Vegetation and Tree Removal Activities

Watershed	Creek	Location (street crossing)	Stationing (From)	Stationing (To)	Vegetation Maintenance Activities	
					Vegetation Removal <6" (sq. ft.)	Tree Removal (type, #, dbh)
Flow Conveyance						
Access to Valley Water Flood Protection Facilities						
Structural Integrity of Facilities						
Fire Resilience						
Hazard Trees						
Restoration Site Maintenance						
Ecological Health – Invasive Plant Management						

Ecological Health - Other						

Notes: This table does not include vegetation management activities that are less than 436 square feet.

1.4 NPW and ASR Nomenclature

The NPW's nomenclature system was designed to identify work activities and be able to apply permit requirements to them. Each work item described in the following sections is uniquely identified by calendar year, work activity type, and consecutive number per year. "Item" numbers are presented as a sequence: "YR"-"Basin"-"Activity"-"consecutive number," for example, 24-SS-001. The first two digits are the calendar year. The first letter is the Water Boards' basin. "S" is the Santa Clara basin, and "P" is the Pajaro basin. The second letter is the SMP-3 Work Activity category, shown in the table below. The last three digits are a consecutive number per Basin and Work Activity, automatically generated when a new *Item* is created. For example, SS-001 is the first sediment removal item in the Santa Clara basin created in the database for that year. PA-010 is the 10th Animal Conflict item in the Pajaro basin created in the database for that year.

~~Each SMP-3 item must have only one work activity and only one location. Two NPW items with the same activity cannot have intersecting stationing locations.~~

Category Letter	Category Name
B	Bank Stabilization
A	Management of Animal Conflicts
M	Minor Maintenance
S	Sediment Removal
V	Vegetation Management
This description has been added to assist agency staff in reading the NPW's and ASR's. Future database needs may alter this nomenclature.	

Section 2
Project Descriptions

2.1 Vegetation Removal and Tree Removal

[Intro text summarizing proposed vegetation and tree removal activities within the channel's riparian corridor. Describe how proposed vegetation management work is within the Program limits (i.e., no more than 20 percent canopy removal in any reach, tree removal based on Maintenance Guidelines). Refer reader to Section 1.2.1 above for discussion about where pruning below OHW and mowing activities would occur in new areas and sensitive habitats and overall proposed mileage of aquatic herbicide application activities. The subsections below include more details about specific manual and mechanical vegetation removal and tree removal projects. If a project site is a PMA, provide the type of PMA (e.g., PMA- sediment removal, PMA- herbicide, or PMA-vegetation removal) and include the SMP iteration that permanently mitigated for the reach.]

2.1.1 Site No. 24-XV-01

[Include site-specific information about proposed work at Site 1, including the length of the vegetation removal or tree removal area, reason for removing vegetation or trees, description of type and amount of vegetation proposed for removal, and how the work will be completed (i.e., equipment type and quantity removed). For tree removal, indicate tree species, number of trees to be removed, and the range of trunk diameters in dbh. For herbicide and manual vegetation removal activities, include square footage of work area. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct this vegetation or tree removal activity.

Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe anticipated impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for a roll-up summary of impacts and applicable BMPs and/or VHP conditions.]

[Insert photo]

Photo 1. View of Site 1 looking downstream from X.

2.1.2 Site No. 24-XV-02

[text]

[Insert photo]
Photo 1. View of Site X looking downstream from X.

2.2 Sediment Removal

[Intro text summarizing proposed sediment removal work. Describe how sediment removal work is within the Program limits (e.g., not exceed 300 LF for individual projects in unmodified channels and 5,000 LF for modified channels; must be at least 400 feet away from other in-channel sediment removal sites; must be within 100 feet of associated structure in unmodified channels). Cross-reference maps and representative photos of sediment removal sites. If a project site is a PMA, provide the type of PMA (e.g., PMA- sediment removal, PMA-herbicide, or PMA-vegetation removal) and include the SMP iteration that permanently mitigated for the reach.]

2.2.1 Site No. 24-XS-03

[Include site-specific details about sediment removal at Site X, including the length of the sediment removal area, a description of how the work will be completed (i.e., equipment type, quantity removed), the footprint of the work area, etc. Describe whether equipment would be employed within the channel or from top of bank and whether dewatering would be needed. Indicate whether riparian, wetland, or vegetation removal is required and whether impacts are temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct this sediment removal.]

[Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe anticipated impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for roll-up summary of impacts and applicable BMPs and/or VHP conditions.]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking upstream from X.	**Photo 2.** View of Site X looking downstream from X.

2.2.2 Site No. 24-XS-04

[text]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking upstream from X.	**Photo 2.** View of Site X looking downstream from X.

2.3 Bank Stabilization

[Intro text summarizing proposed bank stabilization/road slip-out repairs. Describe how proposed work is within Program limits (i.e., 150LF/site for soft methods, 300 LF/site for hard and hybrid methods, less than 0.5 acres below the OHWM for individual projects). Cross-reference maps and representative photos of bank stabilization/road slip-out sites.]

2.3.1 Site No. 24-XB-05

[Include site-specific details about bank stabilization activities at Site X. Describe biotechnical treatments. If more hardscape-engineered solutions are necessary, provide justification and a description of the solution. Include the length/area of the work, description of how the work will be completed (i.e., equipment type and quantities), the footprint of work area, etc. Describe whether dewatering would be needed. Indicate whether riparian, wetland, or vegetation removal is required and whether impacts are temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct bank stabilization.

Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe anticipated impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for roll-up summary of impacts and applicable BMPs and/or VHP conditions]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking upstream from X.	**Photo 2.** View of Site X looking downstream from X.
[Insert photo]	
Photo 3. Perpendicular view of Site X looking [insert upstream or downstream] from X.	

2.3.2 Site No. 24-XB-06

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking upstream from X.	**Photo 2.** View of Site X looking downstream from X.
[Insert photo]	
Photo 3. Perpendicular view of Site X looking [insert upstream or downstream] from X.	

2.4 Management of Animal Conflicts

[Intro text summarizing animal conflict activities below top of bank. Describe how proposed work is within Program limits (i.e., less than 42 miles over the Programs 2027 to 2036 period). Cross-reference maps and representative photos of animal conflict activities.]

2.4.1 Site No. 24-XA-07

[Include site-specific details about animal conflict activities at Site X. Include length/area of work, description of how the work will be completed (i.e., equipment type and quantities), footprint of work area, etc. Indicate whether riparian, wetland, or vegetation removal is required and whether impacts are temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct work.

Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe anticipated impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for a roll-up summary of impacts and applicable BMPs and/or VHP conditions]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking upstream from X.	**Photo 2.** View of Site X looking downstream from X.
[Insert photo]	
Photo 3. Perpendicular view of Site X looking [insert upstream or downstream] from X.	

2.4.2 Site No. 24-XA-08

[text]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking upstream from X.	**Photo 2.** View of Site X looking downstream from X.
[Insert photo]	
Photo 3. Perpendicular view of Site X looking [insert upstream or downstream] from X.	

2.5 Minor Maintenance Activities

[Intro text summarizing proposed minor maintenance activities that would result in > 0.01 acre of impacts. Describe how proposed work is within Program limits (i.e., less than 0.1 acres of wetland/riparian impacts, below the annual 0.4-acre limit of wetland/riparian vegetation impacts). Cross-reference maps and representative photos showing the location of minor maintenance sites.]

2.5.1 Site No. 24-XM-09

[Include site-specific information about minor maintenance activities at Site X. Describe the project need and include the length/area of work, a description of how the work will be completed (i.e., equipment type, quantities), etc. Describe whether equipment would be employed within the channel or from top of bank and whether dewatering would be needed. Indicate whether riparian, wetland, or vegetation removal is required and whether impacts are temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct minor maintenance.]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking downstream from X.	**Photo 2.** [insert caption]

2.5.2 Site No. 24-XM-10

[text]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking downstream from X.	**Photo 2.** [insert caption]

Section 3

Maintenance Activity Impact Summary

3.1 Summary of Impacts on Wetlands, Waters and Riparian Resources and Mitigation Needs

[Reference table below summarizing 202X maintenance activities that would result in impacts to wetlands and waters of the U.S./state and/or riparian habitat.]

Table 3-1: Estimated Impacts to Waters of the U.S./State and Riparian Vegetation

Site No.	Maintenance Site Name/Activity	USACE Waters Name	USACE Cowardian Code	Facility/Channel Type	Estimated Impacts on Waters of the U.S./State									Riparian Vegetation Impacts	
					Permanent Impacts (Area, Volume, Length)				Permanent Loss of Waters of the U.S. (Area)	Temporary Impacts(Area, Volume, Length)					
					Area (square feet, Acres)	Volume of Fill (cubic yards)	Volume of Excavated Sediment (cubic yards)	Length (linear feet)		Area (square feet, Acres)	Volume of Fill (cubic yards)	Volume of Excavated Sediment (cubic yards)	Length (linear feet)	Description	Square Feet or Quantity & DBH of Tree Removals
1														[describe species of vegetation / trees requiring complete removal]	
				Totals											

3.2 Potential Impacts on Certain Special-Status Species

[Refer to Table 3-2 below, which summarizes VHP-covered species, state and federally listed species, and one additional species (the San Francisco dusky-footed woodrat) that may be affected (directly or indirectly) by 202X maintenance activities. Table 3-2 specifies which species are covered under the VHP; for state and federally listed species, indicate the applicable impact tiering category[1] (Tier 1, 2, or 3); for Tier 3 sites, quantify direct permanent and temporary impacts on species habitat by site. Describe potential impacts from project activities (e.g., release of hazardous materials, effects on air quality, disturbed areas, etc.), applicable SMP BMPs and/or VHP conditions, indicate whether any VHP surveys would be required, and indicate whether the take of a state-listed or federally listed species may occur.]

[1] Valley Water uses a three-tiered approach to determine whether and where the take of listed species could potentially occur, where measures to avoid and minimize impacts on listed species and their habitats are necessary, and whether the take of listed species could still occur with implementation of those measures. The tiered approach is further explained in Chapter 3, *Maintenance Planning and Impact Avoidance*.

Table 3-2: Summary of Impacts on Certain Special-Status Species with Potential to Occur at Maintenance Sites

Site No.	Site Name	VHP-Covered Species								Additional State and Federally Listed, Proposed, or Candidate Species							Additional Special-Status Species	Applicable BMPs, VHP Conditions, and VHP Requirements	Impact Summary
		California Tiger Salamander (FT, ST, VHP)	California Red-legged Frog (FT, CSSC, VHP)	Foothill Yellow-legged Frog (SE, FP, VHP)	Western Pond Turtle (VHP, CSSC)	Burrowing Owl (VHP, CSSC)	Least Bell's Vireo (FE, SE, VHP)	Tricolored Blackbird (ST, VHP)	San Joaquin Kit Fox (FE, ST, VHP)	Monarch Butterfly (FC, VHP*)	Crotch's Bumble Bee (SC, VHP*)	Bald Eagle (SE, SP)	Swainson's Hawk (ST, VHP*)	California Ridgway's Rail (FE, SE, SP)	California Black Rail (ST, SP)	Salt Marsh Harvest Mouse (FE, SE, SP)	San Francisco Dusky-Footed Woodrat (CSSC)		
		Identify Impact Tier, Quantify impacts for Tiers 2 and 3			Impact Tiers do not apply. Quantify any impacts.														

List Status Definitions:

Federal

FE	Endangered under the Federal Endangered Species Act (FESA)
FT	Threatened under FESA
FP	Proposed for listing under FESA
FC	Candidate for listing under FESA

State

SE	Endangered under the California Endangered Species Act (CESA)
ST	Threatened under CESA
SC	Candidate for Listing under CESA
SP	State Protected
CSSC	California Species of Special Concern

Local

VHP	Covered under the Santa Clara Valley Habitat Plan (VHP)
VHP*	Expected to be covered under an impending VHP amendment

Section 4

Avoidance and Minimization Measures and Mitigation

4.1 Avoidance and Minimization Measures

Attachment A, *Best Management Practices*, of the SMP-3 Manual presents a comprehensive approach to avoiding and minimizing impacts and includes a list of Best Management Practices (BMPs). Attachment A includes general maintenance BMPs, erosion control measures, sediment and water quality control measures, dewatering BMPs, cultural resource protection BMPs, and specific biological resources and habitat protection BMPs.

4.2 Annual Mitigation Plan

[1-paragraph summary description of proposed annual mitigation plan for 202X projects based on the projects' impacts on wetlands/waters, riparian habitat, and focal species.

Generally, describe how many of the SMP-3's wetlands/other water impacts would be offset through PMAs and that the following discussion focuses on mitigation options for addressing other impacts (e.g., waters of the State, CDFW's jurisdiction). Example tables summarizing impacts and mitigation requirements by activity/sites, are included below.]

Table 4-1: Impact and Mitigation Summary for Projects Requiring Mitigation[1]

Site No.	Maintenance Site Name	Impact Type	Impact Quantity (sq ft)		Mitigation Ratio		Mitigation Quantity (sq ft)		Mitigation Type
			Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	
Vegetation Removal and Tree Removal[2]									
		Wetlands or other waters			1.5:1 (for revegetation in unmodified channels) 1.1:1 (for revegetation in modified channels)	0:1			Revegetation, Land acquisition
	Tree removal	Riparian (tree removal)			1:1 tree replacement				Revegetation (tree planting)
		Riparian (veg removal)			1:1				Revegetation, encampment cleanup
Sediment Removal									
Bank Stabilization									
									In lieu fee mitigation (VHP Impact fee or ILF), bank rehabilitation caused by encampments,
Management of Animal Conflicts									

***Minor Maintenance Activities*[2]**									
Total									

[1] This table provides a summary of projects requiring mitigation that are outside of existing PMAs.

[2] This table does not include vegetation management activities that are less than 436 square feet.

Table 4-2: Species-Specific Mitigation for Maintenance Projects Resulting in Take

Species	Permanent Impacts	Mitigation Ratios	Required Mitigation Area		Mitigation Approach
			Mitigation	Acres	
VHP-Covered Species	N/A	N/A	N/A	N/A	Payment of VHP impact fees on an acreage basis for all SMP impacts on land cover types, and compliance with VHP Conditions
Monarch Butterfly*		TBD			TBD
Crotch's Bumble Bee*		TBD			TBD
Special-Status Plants not Covered under the VHP		Mitigation area must (a) already support equal or greater numbers (and health) of individuals of the species in question and (b) contain sufficient unoccupied habitat to allow for an increase in populations, the increase being at least equivalent to the number impacted, through habitat enhancement and management			Preservation, enhancement, and management of occupied habitat
Listed Marsh Species (California Ridgway's Rail, California Black Rail, and Salt Marsh Harvest Mouse)		1.2:1 unless the quality of the habitat impacted is substantially less than at Island Ponds, in which case mitigation credit may be provided at a correspondingly reduced ratio (e.g., 0.5:1 or 0.75:1), with agency approval			Tidal wetland restoration that has already occurred at the Island Ponds will count as permanent mitigation (in perpetuity) for potential impacts to this habitat
Special-Status Bats		Determine in consultation with CDFW		N/A	Consult with CDFW prior to removal or exclusion
CCC steelhead		Will be described in mitigation site plans			Salmonid habitat restoration projects

Notes:

*Expected to be covered under an impending VHP amendment

4.2.1 Summary of Mitigation Projects

[Describe on-site and off-site mitigation projects that will occur in the given year. Include location, square footage, volume (if applicable), mitigation activities, and construction methods that would be employed. Attach maps and detailed mitigation and monitoring plans, if applicable. Examples of mitigation projects could include encampment clean-up and bank rehabilitation, grant programs for local watershed groups, trash and debris removal, revegetation, concrete removal, fishery restoration projects, reach characterization sheets, and post-wildfire recovery.]

4.2.2 Payment of VHP Impact Fees

[Assuming the SMP-3 would not be covered under the VHP during the initial years of the SMP-3, payment of VHP fees may be an appropriate way to mitigate SMP-3 impacts to VHP-covered species. Describe how much Valley Water intends to pay for species impacts.]

4.2.3 Success Criteria

[As appropriate, for revegetation mitigation projects, describe performance/success criteria for each proposed mitigation site. This section may include summary table(s) with target plant survivorship for each year following construction (for 5 years). Cross-reference success criteria established in the SMP-3 permits as applicable.]

4.3 Monitoring and Reporting

4.3.1 Monitoring and Reporting for 202X Mitigation Projects

[Summarize VW's monitoring responsibilities for this year's annual mitigation plan (typically 5 years following planting of wetland species). Information collected typically includes number and species planted at each revegetation mitigation site, square footage of planted area, the percent survivorship. Vegetation monitoring typically involves annual field visits, photo documentation, and a qualitative assessment of plant establishment. Monitoring will be conducted to document that the mitigation is operational and successfully providing the functions and values needed to offset potential Program impacts and is meeting the performance criteria listed in the mitigation and monitoring plan.]

Section 5

Diversion and Dewatering Plan Requirements

5.1 General Diversion and Dewatering Plan Requirements for 202X Projects

[Instream maintenance projects occur in the summer and fall months to avoid late fall, winter, and spring periods when there is a much higher likelihood for storm driven rainfall runoff events. However, many Valley Water streams and channels have perennial flows that extend through the dry summer months. Valley Water will provide an estimate of the flow rates anticipated at the maintenance site and inform the range of dewatering needs for the site. The estimate of streamflow rates (discharge) may rely on historic observations and flow records, gauge data, reservoir releases, other releases from outfalls or pump stations, or other information. If historical or other flow data is not available, then Valley Water will assess channel morphology (width, depth, and existing flow conditions [wetted perimeter])to estimate the summer flow conditions that the dewatering will address to enable the maintenance to occur.]

Include a contingency plan describing what VW will do should a summer flow event occur that exceeds the capacity of the dewatering system. The plan should describe the measures that will be taken (e.g., increase the capacity of the system, demobilize and stabilize the construction site and remove the system), and the length of time it will take the Applicant to enact the above measures. Water quality monitoring will be conducted per VW's SMP Water Quality Monitoring Plan.]

5.2 Diversion-Specific Requirements

[Include observations of the flow conditions upstream of the system. The potential need to increase the flow capacity of the system will be assessed when at least 25% chance of 0.10 inches of rain is forecasted anywhere in the watershed upstream of the project site.]

[Include the capacity of the proposed system, including an assessment of the capacity relative to the information generated through the analysis of historical rainfall, flow data, or channel morphology.]

[State actions that will be taken to prevent erosion, scour, and/or sediment deposits that could impact natural bedding materials.]

[Include a diversion and dewatering design schematic in plan views. Schematics should include:

a. Date;

b. Engineer's Name;

c. Description of upstream and downstream diversion dams specifying materials that may be used in their construction;

d. Diversion intake design(s), capacity(ies), and location(s);

e. Diversion discharge outlet design(s), capacity(ies), and location(s);

f. Location(s) and size(s) of outfall and/or pump station within or upstream of the diversion system, the potential flow volume of the identified outfalls/pump stations, and measures to be implemented to prevent water quality impacts from identified outfalls/pump stations;

g. Dewatering intake design(s), capacity(ies), and location(s);

h. Dewatering pipe design(s), capacity(ies), and location(s);

i. Dewatering discharge outlet design(s), capacity(ies), and location(s);

j. Settling tank design(s), capacity(ies), and location(s); and

k. Erosion, scour, and sediment BMPs to be installed at the diversion and dewatering discharge locations]

ATTACHMENT J

Annual Summary Report

Santa Clara Valley Water District



202X Annual Summary Report

Stream Maintenance Program

Prepared for:
[Resource Agencies]

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Contact: Jon Jankovitz
(408) 265-2600

[date]

Santa Clara Valley Water District. 202X. 202X Annual Summary Report – Stream Maintenance Program. [Date].

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Section 1
Introduction

1.1 Introduction to the Summary Report

[Brief paragraph summary of the Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program and purpose, referencing the SMP-3 Manual. Include statement stating that this summary report has been prepared based on the reporting year's Maintenance Projects completed and other reporting requirements as appropriate. Indicate that the purpose of this summary report is to summarize the different projects by location and activity and is aligned with the annual notification template. Also indicate that detailed descriptions of how applicable activities are carried out are described in the Manual and will be incorporated by reference. Additional work details beyond the descriptions provided in the summary tables can be made available upon request. The annual NPW can also be attached as an appendix.]

1.2 Annual Summary Report Maintenance Activities

[Brief paragraph summary of the total number of 202X maintenance projects completed. Subsections 1.2.1 through 1.2.5 summarize maintenance projects completed by activity type with reference to the Manual for overall descriptions.

1.2.1 Vegetation Management

[Brief written summary of vegetation management activities that occurred below top of bank, including vegetation removal <6" dbh, trees (>6" dbh), and aquatic herbicide application that were completed in the reporting year. Generally, describe where pruning activities below OHW and mowing activities took place in new work areas in sensitive habitats (e.g., wetlands or woody riparian vegetation). Describe generally what the work entailed, the primary maintenance that was needed, and list the maintenance triggers that were met. As appropriate, VW may refer to maps depicting where mowing, aquatic herbicide application, and pruning work did occur. [Cross-reference Manual as applicable.] Include a figure for the Vegetation Maintenance locations for the reporting year

1.2.2 Sediment Removal

[Brief summary of implemented sediment removal projects in Valley Water creeks, channels, and detention basins for the reporting year. Total numbers of sediment removal projects by watershed could be included. Describe generally what the work entailed, the primary maintenance that was needed, and list the maintenance triggers that were met. Table 1-1 provides a summary list of specific sediment removal projects by project ID and creek. For specific descriptions on how sediment removal is conducted, cross-reference Manual as applicable. Include a figure showing the sediment removal locations for the reporting year.]

Table 1-1. Summary Table of Sediment Removal Locations for Reporting Year XXXX

Project ID #	Creek Name and Location	Project Length (ft)	Description of Sediment Removed	Mitigation (amount, not required, or PMA)
			[Include length (ft), width (ft), and volume of sediment removed (cubic ft).]	

1.2.3 Bank Stabilization

[Brief summary of total number of bank stabilization projects and total mileage of combined bank repair projects (must be within 1 linear mile of channel) completed in the reporting year. Describe generally what the work entailed, the primary maintenance that was needed, and list the maintenance triggers that were met. Table 1-2 provides a summary list of specific bank stabilization projects by project ID and creek. For specific descriptions on how bank stabilization projects are conducted, cross-reference Manual as applicable. Include a figure showing the bank stabilization locations for the reporting year.]

Table 1-2. Bank Stabilization Projects for Reporting Year XXXX

Project ID #	Creek Name and Location	Project Length (ft)	Description of Bank Stabilization Work	Length or Area of Hardscape Below OHW	Length or Area of Hardscape Above OHW and Below Top of Bank	Mitigation (amount or not required)
			[Indicate area of construction footprint, amount of hardscaped replaced if applicable, area of access if applicable.]			

1.2.4 Management of Animal Conflicts

[Brief summary of animal conflict management activities that occurred during the reporting year, below top of bank, including surface compaction of levee faces, filling burrows w/ soil or slurry, placement of physical barriers, beaver dam management, placement of bird nest deterrence for work area structures, bat inspection (for Upper Llagas Creek Flood Protection Project), and chemical control. Describe generally what the work entailed, the primary maintenance that was needed, and list the maintenance triggers that were met. Table 1-3 provides a summary list of animal conflict projects by project ID and creek. For specific descriptions on how management of animal conflicts are carried out, cross-reference Manual as applicable. Include Figure of project locations for the reporting year.]

Table 1-3. Summary of Animal Conflicts Management for Reporting Year XXXX

Project ID #	Creek Name and Location	Description of Animal Conflict Management Performed

1.2.5 Minor Maintenance Activities

[Brief written summary of minor maintenance activities to be reported that had impacts on 0.01 acre or more of wetland or riparian vegetation per project or minor maintenance activities involving dewatering. Note that minor maintenance activities are only reported under certain circumstances, as described in Chapter 8, *Minor Maintenance Activities.* Refer back to Chapter 8 for descriptions of minor maintenance activities, if needed. Describe generally what the work entailed, the primary maintenance that was needed, and the list of maintenance triggers that have been met; cross-reference Manual as applicable. See Table 1-4 to capture these activities in the reporting year.]

Table 1-4. Summary of Minor Maintenance Activities for Reporting Year XXXX

Project ID #	Creek Name and Location	Other Maintenance Activity Type	Date of Activity and Description of the Maintenance Performed

1.3 Project List and Locations

Refer to Tables 1-1 through 1-4 above for projects that were completed in the 202X maintenance season. Tables 1-5 and 1-6 summarize the maintenance project locations and vegetation and tree removal activities. Valley Water's geospatial browser also shows that each maintenance location can be accessed at: [insert link]

- Tree Removal >6" dbh and vegetation removal <6" dbh Below Top of Bank (X Projects) [Tree removals >6" dbh and vegetation removal <6" dbh Below Top of Bank projects can be consolidated and reported together as long as they were happening in the same geographic area and under the same work purpose]
- Sediment Removal (X Projects)
- Bank Stabilization (X Projects)
- Management of Animal Conflicts (X Projects)
- Minor Maintenance Activities with Impacts > 0.01 Acre of Wetland/Riparian Vegetation or Involve Dewatering (X Projects)

Table 1-5: Maintenance Project Site Locations

Site No.	Maintenance Site Name	City	Latitude	Longitude	Assessor's Parcel Number (APN)	Waterbody Affected	Basin
Sediment Removal							
Bank Stabilization							
Management of Animal Conflicts							
Minor Maintenance Activities							
Large Woody Debris Removal							

Table 1-6: Vegetation and Tree Removal Activities

Watershed	Creek	Location (street crossing)	Stationing (From)	Stationing (To)	Vegetation Maintenance Activities	
					Vegetation Removal <6" (sq. ft.)	Tree Removal (type, #, dbh)
Flow Conveyance						
Access to Valley Water Flood Protection Facilities						
Structural Integrity of Facilities						
Fire Resilience						
Hazard Trees						
Restoration Site Maintenance						
Ecological Health – Invasive Plant Management						

Ecological Health - Other						

Notes: This table does not include vegetation management activities that were less than 436 square feet.

Section 2
Project Descriptions

2.1 Vegetation Removal and Tree Removal

[Intro text summarizing the vegetation and tree removal activities that occurred within the channel's riparian corridor. Describe how the vegetation management work was within the Program limits (i.e., no more than 20 percent canopy removal in any reach, tree removal based on Maintenance Guidelines). Refer reader to Section 1.2.1 above for discussion about where pruning below OHW and mowing activities occurred in new areas and sensitive habitats and overall mileage of aquatic herbicide application activities. The subsections below include more details about specific manual and mechanical vegetation removal and tree removal projects.]

2.1.1 Site No. 24-XV-01

[Include site-specific information about work that occurred at Site 1, including the length of the vegetation removal or tree removal area, reason for removing vegetation or trees, description of type and amount of vegetation that was removed, and how the work was completed (i.e., equipment type and quantity removed). For tree removal, indicate tree species, number of trees that were removed, and the range of trunk diameters in dbh. For herbicide and manual vegetation removal activities, include square footage of work area. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct this vegetation or tree removal activity.

Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for a roll-up summary of impacts and applicable BMPs and/or VHP conditions.]

[Insert before photo]	[Insert after photo]
Photo 1. View of Site 1 looking downstream from X before the work occurred. [Insert same photo used in the NPW for the given year]	**Photo 2.** View of Site 1 looking downstream from X after the work occurred.

2.1.2 Site No. 24-XV-02

[text]

[Insert before photo]	[Insert after photo]
Photo 1. View of Site X looking downstream from X before the work occurred [Insert same photo used in NPW for the given year]	**Photo 2.** View of Site X looking downstream after the work occurred.

2.2 Sediment Removal

[Intro text summarizing the sediment removal work that occurred. Describe how sediment removal work was within the Program limits (e.g., not exceed 300 LF for individual projects in unmodified channels and 5,000 LF for modified channels; must be at least 400 feet away from other in-channel sediment removal sites; must be within 100 feet of associated structure in unmodified channels). Cross-reference maps and representative photos of sediment removal sites.

2.2.1 Site No. 24-XS-03

[Include site-specific details about sediment removal at Site X, including the length of the sediment removal area, a description of how the work will be completed (i.e., equipment type, quantity removed), the footprint of the work area, etc. Describe whether equipment would be employed within the channel or from top of bank and whether dewatering would be needed. Indicate whether riparian, wetland, or vegetation removal is required and whether impacts are temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct this sediment removal.]

Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for roll-up summary of impacts and applicable BMPs and/or VHP conditions.]

[Insert before photo]	[Insert after photo]

Photo 1. View of Site X looking upstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 2.** View of Site X looking upstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 3. View of Site X looking downstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 4.** View of Site X looking downstream from X after the work occurred.

2.2.2 Site No. 24-XS-04

[Insert before photo]	[Insert after photo]
Photo 1. View of Site X looking upstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 2.** View of Site X looking upstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 3. View of Site X looking downstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 4.** View of Site X looking downstream from X after the work occurred.

2.3 Bank Stabilization

[Intro text summarizing the bank stabilization/road slip-out repairs that occurred. Describe how the work that occurred was within Program limits (i.e., 150LF/site for soft methods, 300 LF/site for hard and hybrid methods, less than 0.5 acres below the OHWM for individual projects). Cross-reference maps and representative photos of bank stabilization/road slip-out sites.]

2.3.1 Site No. 24-XB-05

[Include site-specific details about bank stabilization activities at Site X. Describe biotechnical treatments. If more hardscape-engineered solutions were necessary, provide justification and a description of the solution. Include the length/area of the work, description of how the work was completed (i.e., equipment type and quantities), the footprint of work area, etc. Describe whether dewatering was needed. Indicate whether riparian, wetland, or vegetation removal was required and whether impacts were temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct bank stabilization.

Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for roll-up summary of impacts and applicable BMPs and/or VHP conditions]

[Insert before photo]	[Insert after photo]
Photo 1. View of Site X looking upstream from X before the work occurred[Insert same photo used in NPW for the given year]	**Photo 2.** View of Site X looking upstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 3. View of Site X looking downstream from X before the work occurred [Insert same photo used in NPW for the given year]	**Photo 4.** View of Site X looking downstream from X after the work occurred.
[Insert before photo]	[Insert after photo]

Photo 5. Perpendicular view of Site X from looking [insert upstream or downstream] before the work occurred [Insert same photo used in NPW for the given year]	**Photo 6.** Perpendicular view of Site X from looking [insert upstream or downstream] after the work occurred.

2.3.2 Site No. 24-XB-06

[Insert before photo]	[Insert after photo]
Photo 1. View of Site X looking upstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 2.** View of Site X looking upstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 3. View of Site X looking downstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 4.** View of Site X looking downstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 5. Perpendicular view of Site X looking [insert upstream or downstream] from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 6.** Perpendicular view of Site X looking [insert upstream or downstream] from X after the work occurred.

2.4 Management of Animal Conflicts

[Intro text summarizing animal conflict activities that occurred below top of bank. Describe the work that occurred within Program limits (i.e., less than 42 miles over the Programs 2027

to 2036 period). Cross-reference maps and representative photos of animal conflict activities.]

2.4.1 Site No. 24-XA-07

[Include site-specific details about animal conflict activities that occurred at Site X. Include length/area of work, description of how the work was completed (i.e., equipment type and quantities), footprint of work area, etc. Indicate whether riparian, wetland, or vegetation removal was required and whether impacts were temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct work.

Describe whether any biological surveys were performed to satisfy conditions in the VHP and/or BMPs and general findings. Describe impacts on jurisdictional wetlands/other waters of the U.S./State and special-status species. Refer reader to Section 3 for a roll-up summary of impacts and applicable BMPs and/or VHP conditions]

[Insert before photo]	[Insert after photo]
Photo 1. View of Site X looking upstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 2.** View of Site X looking upstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 3. View of Site X looking downstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 4.** View of Site X looking downstream from X after the work occurred.
[Insert before photo]	[Insert after photo]

Photo 5. Perpendicular view of Site X looking [insert upstream or downstream] from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 6.** Perpendicular view of Site X looking [insert upstream or downstream] from X after the work occurred.

2.4.2 Site No. 24-XA-08

[text]

[Insert before photo]	[Insert after photo]
Photo 1. View of Site X looking upstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 2.** View of Site X looking upstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 3. View of Site X looking downstream from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 4.** View of Site X looking downstream from X after the work occurred.
[Insert before photo]	[Insert after photo]
Photo 5. Perpendicular view of Site X looking [insert upstream or downstream] from X before the work occurred. [Insert same photo used in NPW for the given year]	**Photo 6.** Perpendicular view of Site X looking [insert upstream or downstream] from X after the work occurred.

2.5 Minor Maintenance Activities

[Intro text summarizing the minor maintenance activities that resulted in > 0.01 acre of impacts. Describe how the work occurred within Program limits (i.e., less than 0.1 acres of wetland/riparian impacts, below the annual 0.4-acre limit of wetland/riparian vegetation impacts). Cross-reference maps and representative photos showing the location of minor maintenance sites.]

2.5.1 Site No. 24-XM-09

[Include site-specific information about minor maintenance activities at Site X. Describe why the project was needed and include the length/area of work, a description of how the work was completed (i.e., equipment type, quantities), etc. Describe whether equipment was employed within the channel or from top of bank and whether dewatering was needed. Indicate whether riparian, wetland, or vegetation removal was required and whether impacts were temporary vs. permanent. Briefly describe that the maintenance triggers (reference the Manual) were evaluated and resulted in the need to conduct minor maintenance.]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking downstream from X.	**Photo 2.** [insert caption]

2.5.2 Site No. 24-XM-10

[text]

[Insert photo]	[Insert photo]
Photo 1. View of Site X looking downstream from X.	**Photo 2.** [insert caption]

Section 3
Maintenance Activity Impact Survey

3.1 Summary of Impacts on Wetlands, Waters and Riparian Resources and Mitigation Needs

[Reference table below summarizing 202X maintenance activities that resulted in impacts to wetlands and waters of the U.S./state and/or riparian habitat.]

Table 3-1: Impacts that occurred to Waters of the U.S./State and Riparian Vegetation

Site No.	Maintenance Site Name/Activity	USACE Waters Name	USACE Cowardian Code	Facility/Channel Type	Estimated Impacts on Waters of the U.S./State									Riparian Vegetation Impacts	
					Permanent Impacts (Area, Volume, Length)				Permanent Loss of Waters of the U.S. (Area)	Temporary Impacts (Area, Volume, Length)					
					Area (square feet, Acres)	Volume of Fill (cubic yards)	Volume of Excavated Sediment (cubic yards)	Length (linear feet)		Area (square feet, Acres)	Volume of Fill (cubic yards)	Volume of Excavated Sediment (cubic yards)	Length (linear feet)	Description	Square Feet or Quantity & DBH of Tree Removals
1														[describe species of vegetation / trees requiring complete removal]	
				Totals											

3.2 Summary of Impacts on Certain Special-Status Species

[Describe sites where 202X maintenance activities caused take, or required mitigation, for VHP-covered species, state and federally listed species, and/or the San Francisco dusky-footed woodrat. Reference Table 3-2 in the NPW that specifies which species are covered under the VHP; for state and federally listed species, indicate the applicable impact tiering category[1] (Tier 1, 2, or 3); for Tier 3 sites, quantify direct permanent and temporary impacts on species habitat by site. Describe the impacts from project activities (e.g., release of hazardous materials, effects on air quality, disturbed areas, etc.), applicable SMP BMPs and/or VHP conditions, and indicate whether any VHP surveys were required.]

3.3 Cultural Resources

[Summarize the findings of the cultural resources assessment conducted for the 202X maintenance sites, including results of the records search, mapping, and field surveys, if necessary. Summarize all mitigation and/or management recommendations that were implemented to avoid impacts to cultural resources during work. Note that some aspects of cultural resources reports may need to be kept confidential.]

[1] Valley Water uses a three-tiered approach to determine whether and where the take of listed species could potentially occur, where measures to avoid and minimize impacts on listed species and their habitats are necessary, and whether the take of listed species could still occur with implementation of those measures. The tiered approach is further explained in Chapter 3, Maintenance Planning and Impact Avoidance.

Section 4

Avoidance and Minimization Measures

4.1 Avoidance and Minimization Measures

Appendix A, Best Management Practices, of the SMP-3 Manual presents a comprehensive approach to avoiding and minimizing impacts and includes a list of Best Management Practices (BMPs). Appendix A includes general maintenance BMPs, erosion control measures, sediment and water quality control measures, dewatering BMPs, cultural resource protection BMPs, and specific biological resources and habitat protection BMPs.

4.2 Annual Mitigation Plan

[1-paragraph summary description of the annual mitigation for 202X projects based on the projects' impacts on wetlands/waters, riparian habitat, and focal species.

Generally, describe how many of the SMP-3's wetlands/other water impacts were offset through PMAs and that the following discussion focuses on mitigation options for addressing other impacts (e.g., waters of the State, CDFW's jurisdiction). Example tables summarizing impacts and mitigation requirements by activity/sites, are included below.]

Table 4-1: Impact and Mitigation Summary for Projects Requiring Mitigation

Site No.	Maintenance Site Name	Impact Type	Impact Quantity (sq ft)		Mitigation Ratio		Mitigation Quantity (sq ft)		Mitigation Type
			Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	
Vegetation Removal and Tree Removal[2]									
		Wetlands or other waters			1.5:1 (for revegetation in unmodified channels) 1.1:1 (for revegetation in modified channels)	0:1			Revegetation, Land acquisition
	Tree removal	Riparian (tree removal)			1:1 tree replacement				Revegetation (tree planting)
		Riparian (veg removal)			1:1				Revegetation, encampment cleanup
Sediment Removal									
Bank Stabilization									
									In lieu fee mitigation, bank rehabilitation caused by encampments,
Management of Animal Conflicts									

[2] This table does not include vegetation management activities that are less than 436 square feet.

Minor Maintenance Activities[3]									
Total									

[3] This table does not include minor maintenance activities that are less than 436 square feet.

Table 4-2: Species-Specific Mitigation for Maintenance Projects Resulting in Take

Species	Permanent Impacts	Mitigation Ratios	Required Mitigation Area		Mitigation Approach
			Mitigation	Acres	
VHP-Covered Species	N/A	N/A	N/A	N/A	Payment of VHP impact fees on an acreage basis for all SMP impacts on land cover types, and compliance with VHP Conditions
Monarch Butterfly*		TBD			TBD
Crotch's Bumble Bee*		TBD			TBD
Special-Status Plants not Covered under the VHP		Mitigation area must (a) already support equal or greater numbers (and health) of individuals of the species in question and (b) contain sufficient unoccupied habitat to allow for an increase in populations, the increase being at least equivalent to the number impacted, through habitat enhancement and management			Preservation, enhancement, and management of occupied habitat
Listed Marsh Species (California Ridgway's Rail, California Black Rail, and Salt Marsh Harvest Mouse)		1.2:1 unless the quality of the habitat impacted is substantially less than at Island Ponds, in which case mitigation credit may be provided at a correspondingly reduced ratio (e.g., 0.5:1 or 0.75:1), with agency approval			Tidal wetland restoration that has already occurred at the Island Ponds will count as permanent mitigation (in perpetuity) for potential impacts to this habitat
Special-Status Bats		Determine in consultation with CDFW		N/A	Consult with CDFW prior to removal or exclusion
CCC steelhead		Will be described in mitigation site plans			Salmonid habitat restoration projects

4.2.1 Summary of Mitigation Projects

[Describe mitigation projects that were proposed in the NPW that have now been completed in 202X, and which (if any) projects that had been planned in 202X but were not completed. Describe if there were any deviations from what was proposed in the NPW project plans for any of these projects.]

4.2.2 Payment of VHP Impact Fees

[Assuming the SMP-3 would not be covered under the VHP during the initial years of the SMP-3, payment of VHP fees may be an appropriate way to mitigate SMP-3 impacts to VHP-covered species. Describe how much Valley Water paid for species impacts.]

4.2.3 Success Criteria

[As appropriate, for revegetation mitigation projects, describe performance/success criteria for each proposed mitigation site. This section may include summary table(s) with target plant survivorship for each year following construction (for 5 years). Cross-reference success criteria established in the SMP-3 permits as applicable.

4.3 Mitigation and Monitoring

[Brief text summary of the mitigation work completed for the reporting year. Indicate what activity the mitigation was used for, if the work occurred in a PMA, and if additional mitigation was required or occurred.]

Table 4-3. Summary of Mitigation Projects Installed During Reporting Year XXXX

Project ID #	Creek Name and Location	Mitigation Site Description	Completion Date of Activity
		[Identify mitigation project. For example, Riparian Woodland Revegetation or Fish Passage Project. Details of each mitigation site will be provided in the mitigation reports that are attached.]	[Identify the date that the activity was completed, if it was completed. If not completed, state, "Not Completed"]

[Brief text summary of the mitigation monitoring reports (for previously installed mitigation projects) that are being submitted this year. Indicate the types of mitigation projects that are in the reports.]

Table 4-4. Summary of Mitigation Monitoring Reports for the Reporting Year XXXX

Project ID #	Creek Name and Location	Mitigation Site Description
		[Identify mitigation project. For example, Riparian Woodland Revegetation or Fish Passage Project.]

4.4 SMP-3 Program Work and Impact Totals to Date

[Brief text summary of the program totals to date and attach existing/updated cumulative tables as appendices or exhibits of this section. These exhibits could be, but are not limited to, Cumulative summary of SMP impacts to date and Cumulative summary of compensatory mitigation activities to date.)

Section 5
Issues and Lessons Learned

5.1 Summary of Issues during 20XX Maintenance Season

[Provide a summary of any issues encountered during the maintenance season. If incidents to species occurred, include reports as an attachment]

5.2 Lessons Learned from 20XX Maintenance Activities

[Describe any lessons learned during the maintenance season]

Section 6

Maintenance Activities Not Completed in 20XX

6.1 Summary of 20XX Maintenance Activities Not Completed and Proposed for 20XX

[Provide a list of maintenance projects that were not completed during the maintenance season and the reasons]

- [Type of Maintenance Activity]
    - [Site number and name]

Appendix B

Notice of Preparation and Scoping Comments Received

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Notice of Preparation

To: Responsible, Federal and Trustee Agencies (Agency)

(Address)

From: Santa Clara Valley Water District

5750 Almaden Expressway

San Jose, CA 95118

Subject: **Notice of Preparation of a Draft Subsequent Environmental Impact Report**

The Santa Clara Valley Water District (Valley Water) is the lead agency and is preparing a subsequent environmental impact report (SEIR) for the project identified below. Valley Water would like input from your agency and interested members of the public regarding the scope and content of the environmental information to be included in the EIR.

The project description, location, and potential environmental effects are contained in the attached materials.

Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Billy Williams at the address above. Please include your name or the name of a contact person in your agency.

Project Title: Stream Maintenance Program Renewal

Project Applicant, if any: n/a

Date: May 27, 2022

Signature: DocuSigned by: 494EFB72AD8C4F9...

Title: Chief Executive Officer

Telephone: (408) 630-2090

Email:

Reference: Cal. Code Regs., tit. 14, (CEQA Guidelines) Sections 15082, subd. (a), 15103, 15375.

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1. Introduction and Background

Since 2002, the Santa Clara Valley Water District (Valley Water) has administered the Stream Maintenance Program (SMP or Program) to guide, manage, and conduct routine maintenance of streams, flood control channels, and related facilities such that these facilities would continue to provide adequate flow conveyance capacity and function properly. Valley Water manages approximately 275 miles of streams and channels. Routine maintenance is necessary to reduce flood risks, ensure structural integrity of Valley Water facilities, enhance ecologic function, and ensure public safety. Maintenance activities are prioritized and scheduled based on several factors including Valley Water Board policies; condition assessments; stream maintenance guidelines; regulatory permit requirements; county and municipal code compliance; and Valley Water's Safe, Clean Water and Natural Flood Protection Program commitments.

The SMP and its associated Program Manual was originally established in 2001 (referred to as "SMP-1), and the EIR for the SMP was certified in 2002. In 2011, Valley Water updated the Program and Manual (referred to as "SMP-2") to reflect the 2012 through 2022 planning period and various refinements to the Program. A subsequent EIR (SEIR) was prepared for this update and was certified in 2012.

Valley Water is in the process of updating the Program Manual again to reflect modifications to maintenance techniques and activities, work limits, best management practices since the last program update. The current planning process also includes updating the SMP's environmental compliance documentation and renewing the Program's permits.

The current update is referred to as the "SMP Renewal." The SMP Renewal is considered a "project" for the purposes of CEQA and is also referred to as "SMP-3" throughout this document. The SMP Renewal is intended to cover the 10-year planning period between 2024 and 2033. These updated Program documents are intended to fully replace the SMP-2 Manual and its supporting documents. Valley Water is preparing a SEIR to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects associated with approving and implementing the updated SMP for the 2024-2033 period.

2. Program Area

The general Program area is shown in **Figure 1** and includes Santa Clara County below the 1,000-foot elevation contour in both the Santa Clara Valley basin and Pajaro River watershed. However, Valley Water does not work in all channels and creeks below the 1,000-foot contour but maintains a much smaller subset of channels and streams. Maintenance activities are generally limited to locations where Valley Water has land rights, approximately 275 miles of creeks and channels. **Figures 2 through 6** provide additional sub-watershed maps for the Program area.

Municipalities within the Program area that contain Valley Water-owned or maintained channels include the cities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and the towns of Los Altos Hills and Los Gatos. Valley Water generally does not provide maintenance on private property where no easement exists, unless otherwise authorized.

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Horizon WATER and ENVIRONMENT

Figure 1. Program Area

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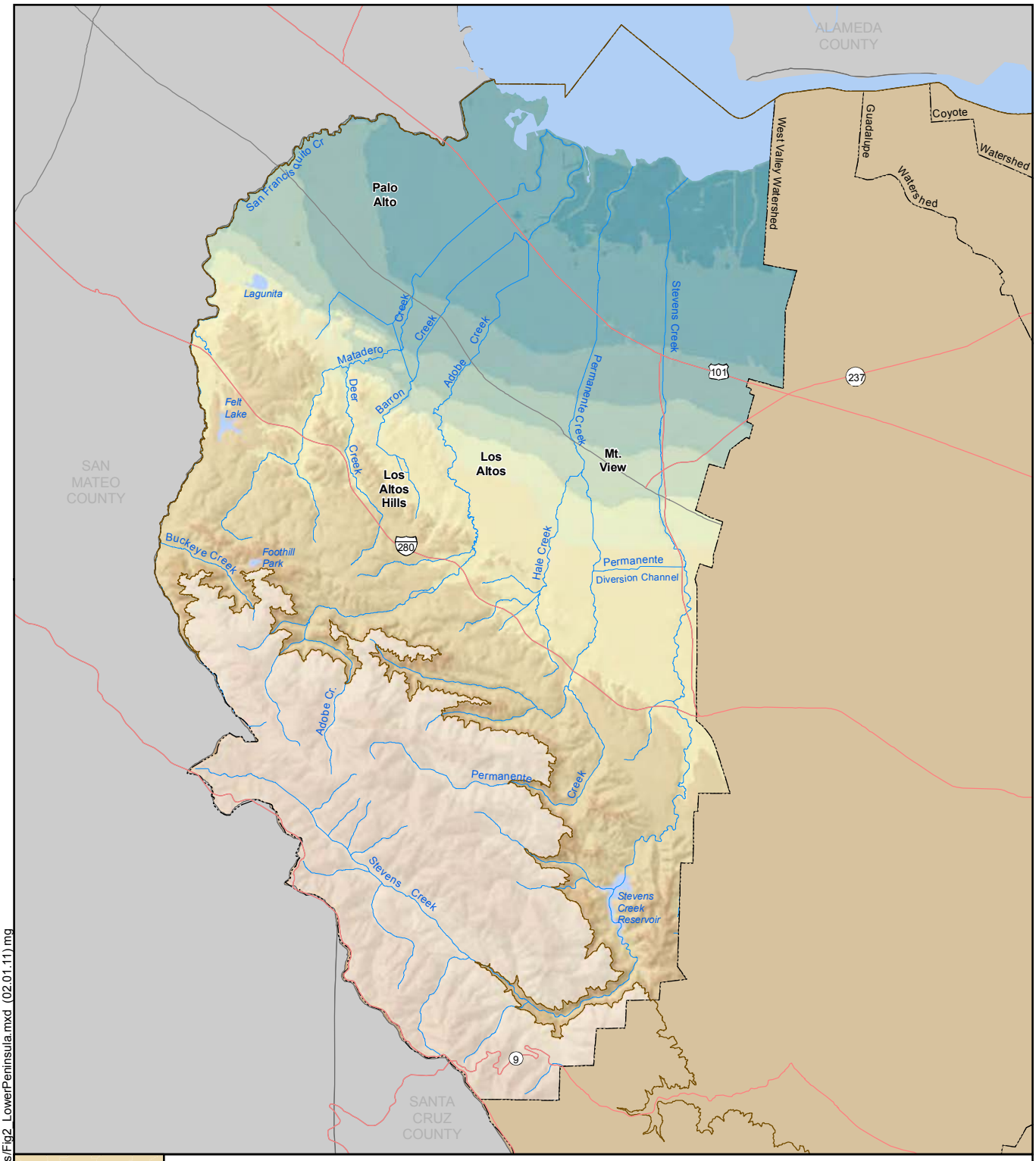

Source: Santa Clara Valley Water District, 2010; ESRI Roads, 2010

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Horizon WATER and ENVIRONMENT

Figure 2. Program Area - Lower Peninsula Watershed

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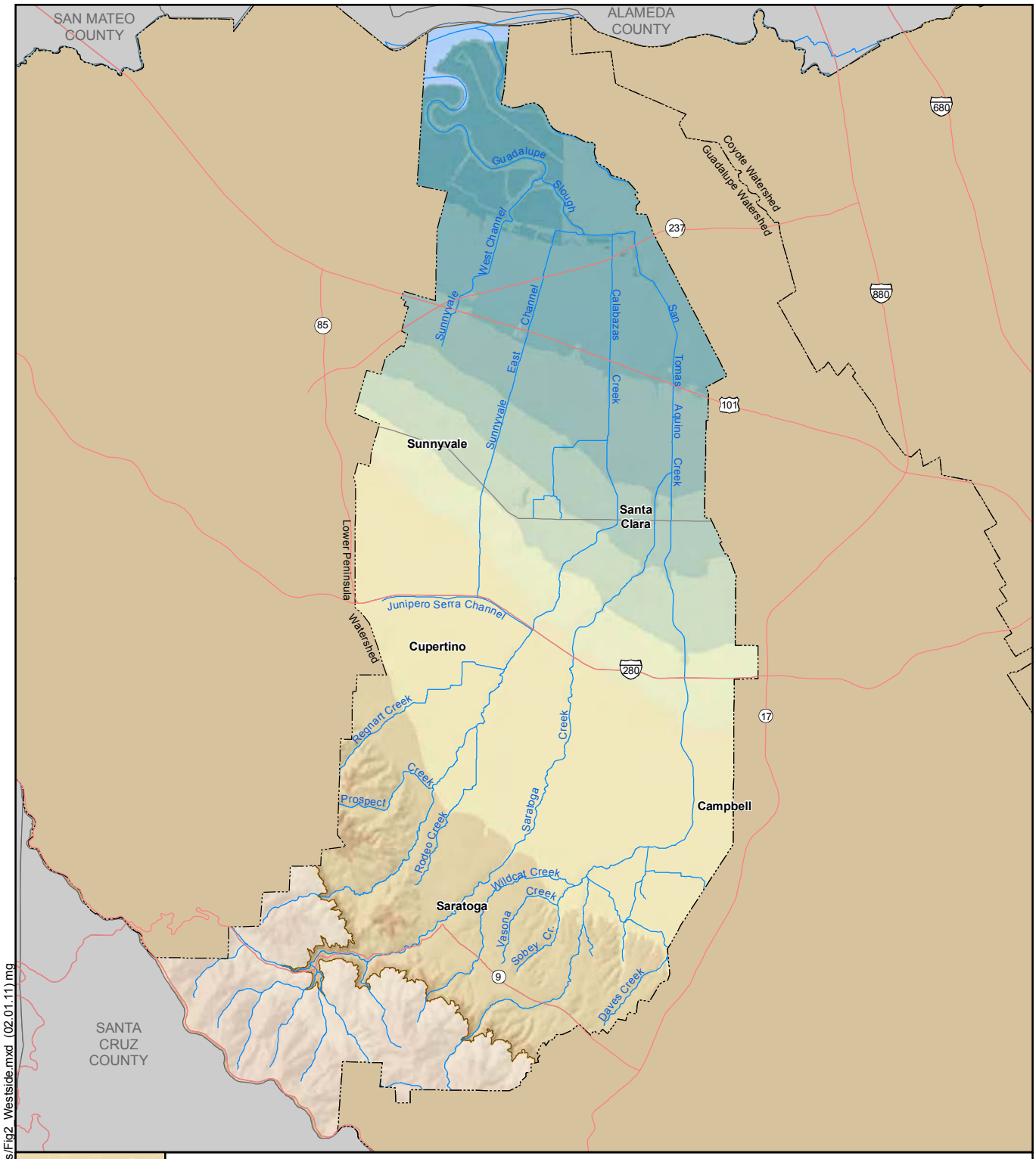

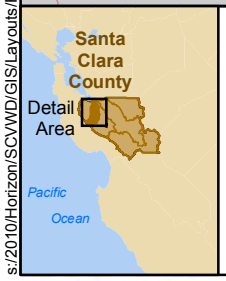

County Boundary
Streams
Major Roads
Upper Elevation Boundary of SMP
Watershed Boundaries

1 inch = 2.3 miles

Miles
0 0.5 1 2

Source: Santa Clara Valley Water District, 2010; ESRI Roads, 2010

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Horizon
WATER and ENVIRONMENT

Figure 3. Program Area - West Valley Watershed

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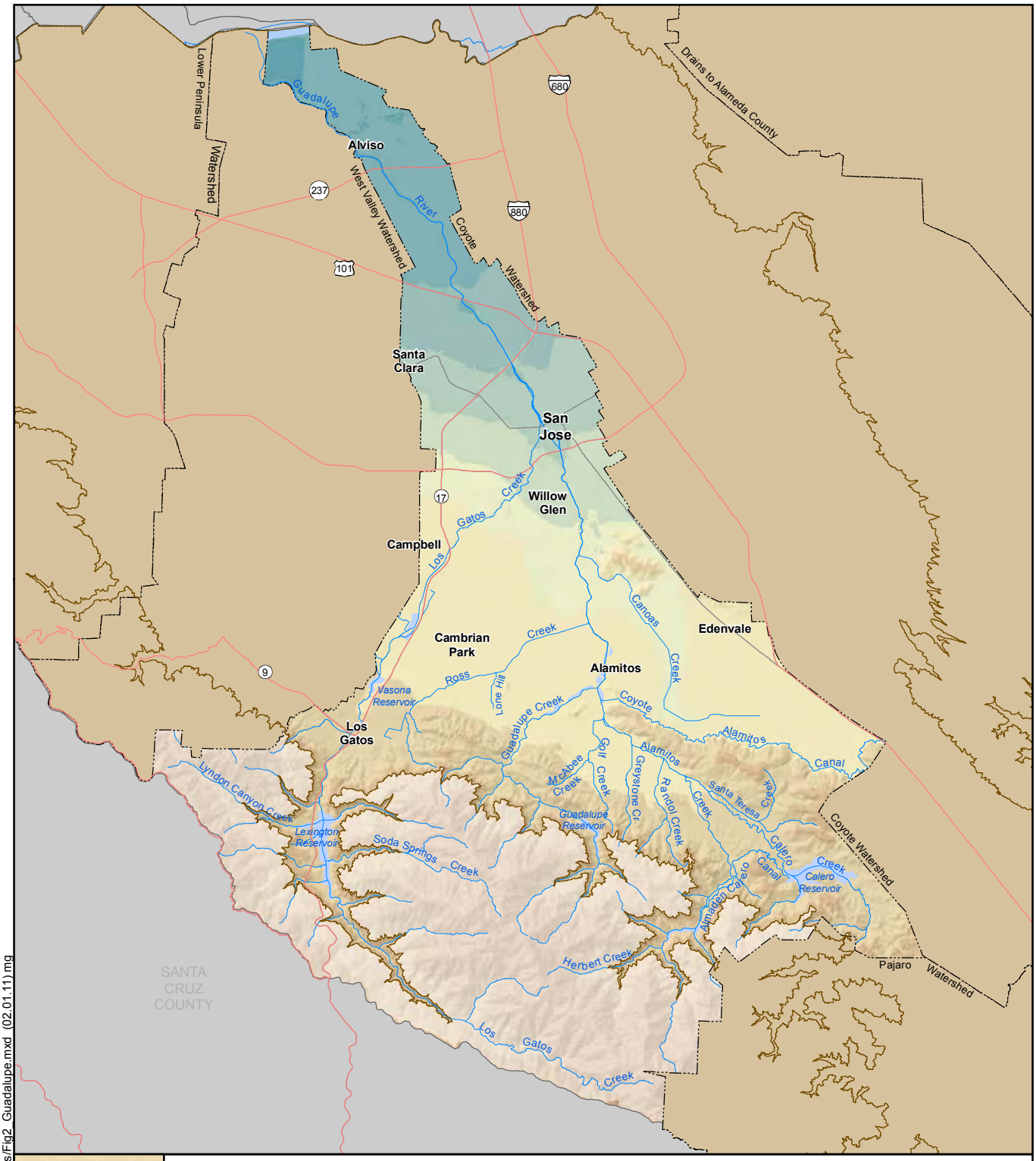

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Horizon WATER and ENVIRONMENT

Figure 4. Program Area - Guadalupe Watershed

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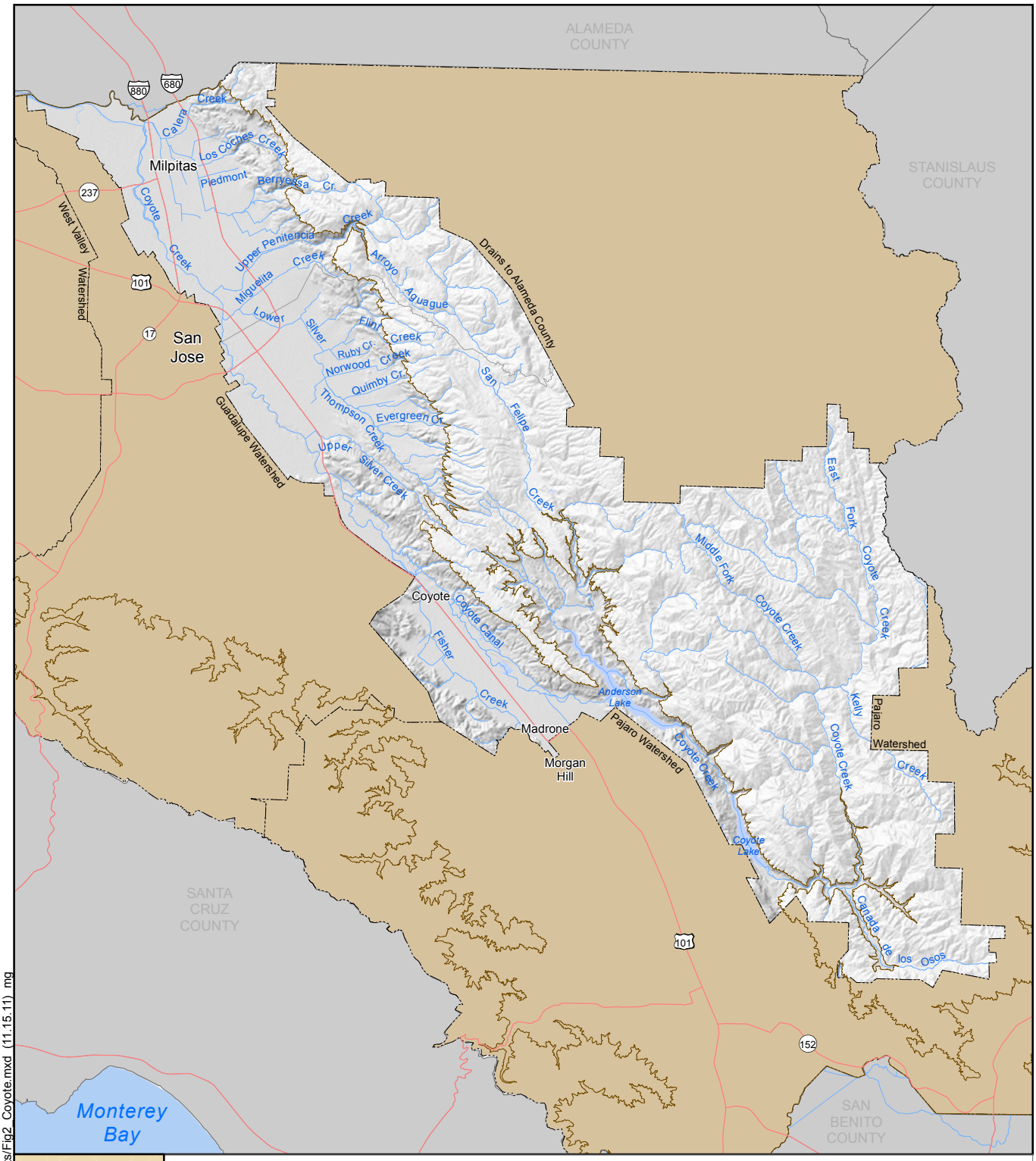

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Horizon WATER and ENVIRONMENT

Figure 5. Program Area - Coyote Watershed

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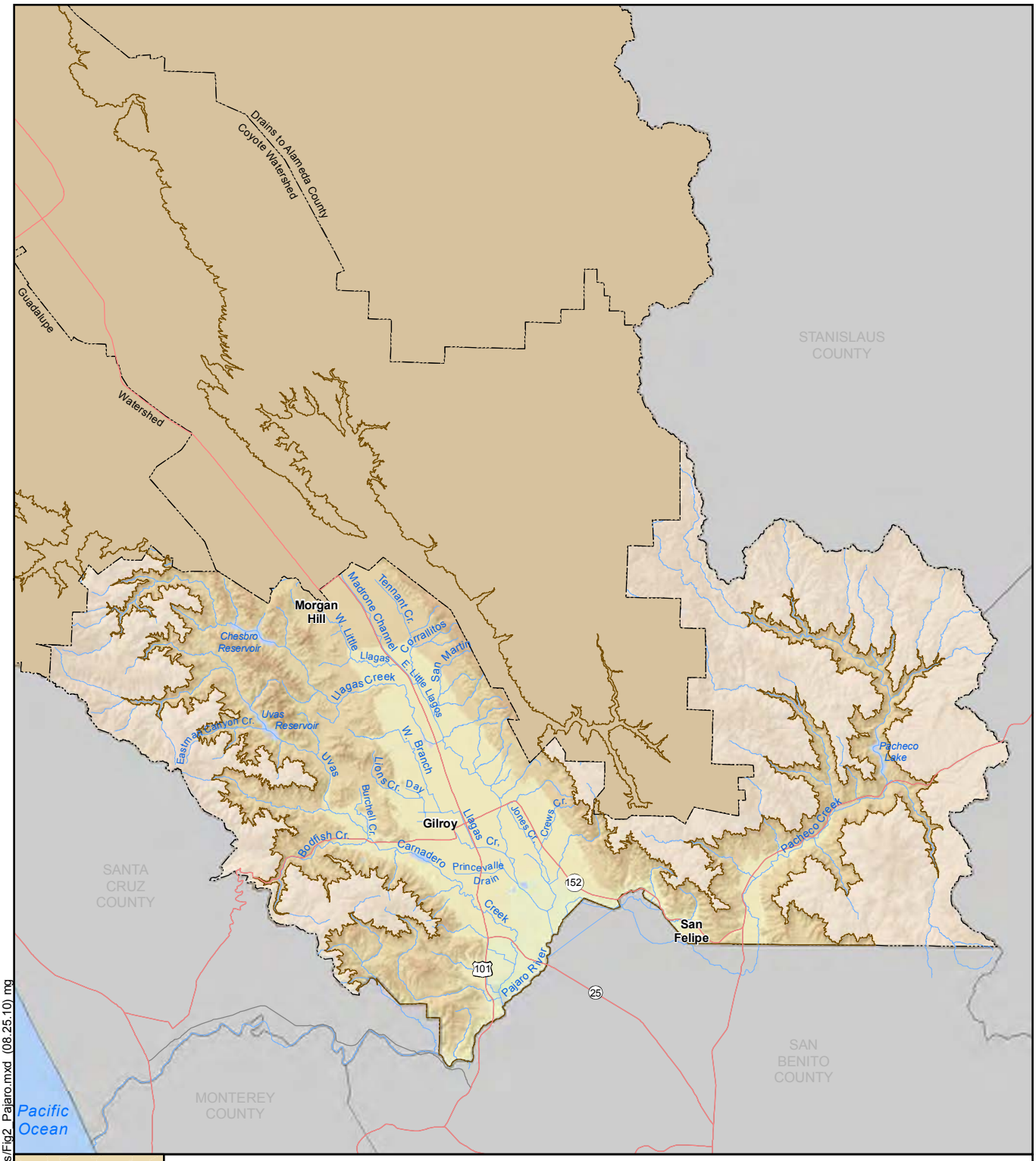

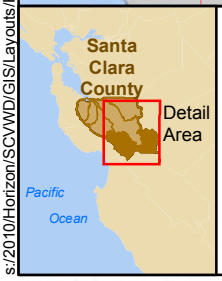

County Boundary
Streams
Major Roads
Upper Elevation Boundary of SMP
Watershed Boundaries

1 inch = 3.5 miles

Miles
0 1.5 3 6

Source: Santa Clara Valley Water District, 2010; ESRI Roads, 2010

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Horizon WATER and ENVIRONMENT

Figure 6. Program Area-Pajaro Watershed

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3. Program Goals and Objectives

The overall goals of the SMP Renewal are to maintain the design flow or appropriate conveyance capacity of Valley Water channels and facilities, and to maintain the structural and functional integrity of Valley Water facilities. To meet these goals, Valley Water prioritizes and administers maintenance activities to achieve the following objectives:

- Remove necessary sediment to provide flow conveyance and safety while maintaining habitat functions in creek systems;
- Manage vegetation for flow conveyance and safety while supporting the habitat functions of creeks, channels, other Valley Water facilities, and manage vegetation to allow levee inspections and access to maintenance work sites;
- Stabilize eroding stream and channel beds and banks to protect existing infrastructure, maintain public safety, reduce sediment loading, protect water quality and protect habitat values; and
- Avoid, minimize or mitigate impacts on the environment by identifying and prioritizing when maintenance work is necessary and incorporating stream stewardship measures to further reduce potential impacts and enhance conditions where possible.

4. Project Description

The SMP Renewal involves five categories of work activities: vegetation management, sediment removal, bank stabilization, management of animal conflicts, large woody debris management, and minor maintenance. A summary of these work activities is described below.

4.1 Vegetation Management

Vegetation management is intended to maintain flow conveyance, flood protection and public safety in Valley Water's channels and right-of-way. Vegetation management is also conducted to reduce fire fuel loads, preserve levee integrity, and provide inspection visibility and access to Valley Water facilities. Vegetation management activities conducted routinely throughout the Program area include pruning, vegetation and tree removal through both hand or mechanical means, herbicide application, mowing, and grazing. Vegetation management also includes non-native invasive plant management and corrective pruning to improve the ecological health of Valley Water facilities and promote stewardship. A brief summary of Valley Water's primary vegetation management activities and where they typically occur is provided below.

Pruning

Pruning refers to removal of select branches from trees or shrubs to improve tree structure and achieve a defined objective. Pruning may be conducted with mechanized and non-mechanized hand tools. Pruning typically takes place along maintenance roads, fences, access ramps, and levee slopes, although it may also occur in-channel or along terrace areas. Pruning is typically conducted to ensure access to Valley Water facilities, protect infrastructure, maintain channel conveyance capacity, and for wildfire and public safety.

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Corrective pruning involves removing specific tree elements to prevent whole tree failure (e.g., decayed or diseased limb), and is typically prescribed by a certified arborist.

Vegetation Removal

Vegetation removal refers to the removal of woody and herbaceous vegetation less than 6 inches diameter-at-breast height (dbh). This work occurs throughout the channel cross-section including but not limited to instream and immediate overstory areas, stream banks, levees, access roads, pedestrian paths, outboard areas, and at bridges and culverts. This work is typically performed using small hand tools or mechanized tools (chainsaws or pole saws) though in some cases mechanized equipment mounted on a vehicle is used.

Tree Removal

Tree removal refers to the removal of any tree greater than 6 inches dbh and may be necessary to provide channel conveyance capacity, wildfire safety, and to improve the ecological health of the stream. Removal of hazardous trees may also be needed to ensure public safety along Valley Water channels, access roads and ramps. Work involves removing the above-ground portions of a tree using mechanized or non-mechanized hand tools followed by stump-treating using herbicides to prevent regrowth.

Herbicide Application

Herbicides are used in conjunction with mechanical and hand vegetation suppression methods to ensure channel conveyance capacity, maintain access to Valley Water facilities, ensure public and wildfire safety, and protect infrastructure and ecological health. Herbicides are used on a site by site basis and only when necessary, such as when hand or mechanical methods are deemed ineffective at managing vegetation removal needs. Herbicide application activities occur in Valley Water channels, access ramps, and on terrace areas, as well as upper and lower maintenance roads and levee slopes. In-channel herbicide application may use a hose and handgun sprayer, or a backpack unit for smaller and more targeted areas. On access roads, herbicides are applied from a truck-mounted boom, handgun or backpack (used around gates, curves, etc.) as needed, to control weeds, ensure maintenance access and provide firebreaks. The booms have multiple nozzles that are specifically calibrated to provide the dosage and spray pattern appropriate to the application area.

Mowing

Valley Water routinely mows ruderal vegetation growing along access roads, fence lines and on terraces, outboard areas, and channel slopes to provide visual access for facility inspections, allow vehicle equipment/maintenance access, and maintain fire safety. Mowing is conducted in accordance with local fire code requirements, which require that all weeds and grasses be maintained below 6 inches in height for 10 feet laterally on both sides of access roads. Mowing is also conducted to maintain 30 feet of vegetation clearance around structures where Valley Water has land rights. This work is conducted either manually with handheld equipment or through mechanical mowing.

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Grazing

Goat grazing is conducted in limited circumstances to control herbaceous weeds growth and to reduce fire hazards where Valley Water has land rights. Before grazing commences, a Valley Water biologist evaluates a targeted area to be grazed to identify sensitive resources including wetlands, special-status plants, wildlife and other aquatic resources. Sensitive resources and vegetation to be preserved are fenced off as a protective measure. Grazing is excluded from wetted channels, wetlands and other aquatic resources. Once fencing has been installed, a herd is placed on a parcel.

4.2 Sediment Removal

Sediment removal is the act of mechanically removing excessive sediment that has deposited within a channel. Sediment removal is required when accumulated sediment reduces a channel's flow conveyance capacity, prevents facilities or appurtenant structures from functioning as intended, or impedes fish passage and access to fish ladders. Sediment is removed to restore channel capacity and minimize the flood hazard in accordance with the existing channel design (as available). Sediment removal under the SMP does not include increasing a channel's cross-sectional area or capacity beyond the as-built channel design or maintenance baseline.

4.3 Bank Stabilization

The SMP includes stabilizing and repairing eroding stream channel beds, banks, and levees. Although bank stabilization is routine and expected, specific work locations are not predictable and therefore occurs on an as-needed basis. The number of bank stabilization projects required in any given year varies depending on weather and hydrologic conditions. Valley Water conducts bank stabilization work when channel conditions: (1) cause or could cause significant damage to Valley Water property and/or adjacent property and infrastructure; (2) create or could create a public safety concern; or (3) cause or could cause in-channel sedimentation and/or affect water quality and other beneficial uses such as riparian habitat and recreational uses. Where feasible, Valley Water strives to limit the use of impervious hardscape materials for bank repair activities. Valley Water first considers biotechnical bank stabilization techniques where feasible and appropriate to minimize adverse environmental effects. If biotechnical bank stabilization techniques are deemed unsuitable due to site conditions (e.g., steep slope, limited right-of-way width, strong hydraulic forces), hardscape solutions may be necessary to stabilize a channel or stream bank.

4.4 Large Woody Debris Management

Valley Water also conducts large woody debris (LWD) management activities. LWD may provide an important ecological role in anadromous salmonid creeks in the Program area (e.g., shading, fish refugia). When downed trees or LWD occur along channels or creeks, Valley Water evaluates the tree for its potential to cause or increase erosion, flooding, reduced channel conveyance capacity, bank failure, or potential to negatively impact a facility (e.g., bridge or culvert). If erosion, flooding risks, and debris capture are unlikely and if the LWD will not damage nearby infrastructure, Valley Water seeks to retain the LWD in anadromous creeks as a habitat feature along the channel. However, if LWD is deemed to pose a potential flood risk or likely to damage infrastructure, Valley Water may reposition,

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modify, cut or remove it to maintain channel conveyance capacity or infrastructure integrity.

4.5 Management of Animal Conflicts

Animals may damage Valley Water facilities by burrowing into levees or channel banks, foraging on revegetated mitigation sites, and/or interfering with Valley Water's work activities. To protect the structural integrity of Valley Water's facilities and to reduce conflicts with species living in sites where work is needed, maintenance work is conducted to repair Valley Water facilities damaged by animals. In managing and reducing animal conflicts, Valley Water uses a holistic approach to maintain a safe work site environment, including the use of biological controls, physical and habitat alteration, bird nest deterrence, non-lethal trapping, and chemical control (i.e. repellents).

4.6 Minor Maintenance

Minor maintenance includes fence repairs, mitigation site maintenance, access road maintenance, debris and trash removal, trash boom installation and maintenance, routine work at maintenance yards, minor sediment removal (25 cubic yards or less), and other minor maintenance activities needed to maintain Valley Water facilities.

5. CEQA Process

5.1 Notice of Preparation

This Notice of Preparation (NOP) presents general background information on the SMP Renewal, the scoping and larger CEQA process, and the environmental issues to be addressed in the SEIR. Valley Water has prepared this NOP pursuant to CEQA Guidelines Section 15082.

5.2 Scoping Meeting

In order for the public and regulatory agencies to have an opportunity to ask questions and submit comments on the scope of the SEIR, a public scoping meeting will be held during the NOP review period. The scoping meeting will solicit input from the public and interested public agencies regarding the nature and scope of environmental impacts to be addressed in the Draft SEIR.

At the meeting, a brief presentation will be made in order to provide an overview of the existing SMP, proposed updates under the SMP Renewal, and the CEQA process generally. After the presentation, an interactive session will follow where members of the public and public agencies may provide oral comments regarding the Program. Prepared written comments will be accepted during the meeting and during the 30-day scoping period. Comment forms will be available at the scoping meeting for those who wish to submit written comments during or at the meeting.

The public scoping meeting is scheduled for:

June 16, 2022 at 5:30 p.m.
Santa Clara Valley Water District's Headquarters Building Boardroom
5700 Almaden Expressway, San Jose, CA 95123

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This scoping meeting information is also available on Valley Water's website (https://www.valleywater.org/project-updates/stream-maintenance-program).

Written comments may be submitted to Valley Water at any time during the NOP review period.

5.3 Draft SEIR

The primary purpose of the SEIR is to analyze and disclose the reasonably foreseeable direct and indirect environmental impacts that may occur as a result of the SMP Renewal. The Draft SEIR, as informed by public and agency input through the scoping period, will analyze and disclose the potentially significant environmental impacts associated with the SMP-3 update and will identify potentially feasible mitigation measures and alternatives where such impacts are considered significant. Alternatives and mitigation measures will be developed with the goal to substantially reduce or avoid potentially significant impacts that are identified.

Below is a preliminary list of resource topics to be addressed in detail in the Draft SEIR. The analysis in the Draft SEIR will determine whether impacts to these resources are reasonably foreseeable, whether they are significant based on identified thresholds of significance, and whether they can be avoided or substantially lessened by potentially feasible mitigation measures and alternatives.

- Aesthetics
- Air Quality
- Biological Resources
- Climate Change / Greenhouse Gas Emissions
- Cultural Resources
- Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services and Utilities
- Transportation and Traffic
- Tribal Cultural Resources
- Wildfire
- Cumulative Impacts

5.4 Public Review of the Draft SEIR

Once the Draft SEIR is completed, it will be made available for a 45-day public review and comment period. Valley Water is also planning to hold a public meeting to review the findings of the Draft SEIR. The meeting will begin with a brief overview of the analysis and conclusions set forth in the Draft SEIR. This introductory presentation will then be followed by the opportunity for interested members of the public to provide oral comments to Valley Water regarding the SMP Renewal under CEQA.

The date, time, and exact location of the public meeting will be published in local newspapers and posted on Valley Water's website prior to the event.

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5.5 Final SEIR

Written and oral comments received in response to the Draft SEIR will be addressed in a Response to Comments document which together with the Draft SEIR will constitute the Final SEIR. The Final SEIR, in turn, will inform Valley Water's discretion as a lead agency under CEQA in deciding whether to approve the SMP Renewal. The Final SEIR will also be used by responsible agencies and other permitting agencies in their decision-making to renew the SMP permits.

6. Submittal of Scoping Comments

The NOP will be circulated to local, state, and federal agencies, and to interested organizations and individuals who may wish to review and comment on the SMP Renewal at this stage in the process. In addition, these documents will be made available for review at Valley Water's offices and on Valley Water's website (https://www.valleywater.org/project-updates/stream-maintenance-program). Written comments concerning the scope and content of this SEIR are encouraged.

Consistent with the time prescribed by State law for public review of a NOP, your response to and input regarding the project should be sent at the earliest possible date, but ***not later than June 27, 2022***. Please include your name, address, and contact number for your agency as applicable for all future correspondence related to the Program. Written comments may be sent via email or letter to:

Santa Clara Valley Water District
Attn: Billy Williams
SMP Renewal Scoping Comments
5750 Almaden Expressway
San Jose, CA 95118

Email: BWilliams@valleywater.org
Subject Line: SMP Renewal Comments

A. Question and Answer Session During CEQA Public Scoping Meeting on 6/16/2022

Below are questions raised by members of the public via Zoom and answers provided by A. Chan (Horizon) and J. Lewis (VW).

i. Will the Program provide Valley Habitat Plan impact fees and what is changing regarding the VHP and SMP-3?
   - A. Chan response: Good question. The Santa Clara Valley Habitat Agency is in the process of amending the VHP. VW is in the process of developing a memorandum of understanding with the Santa Clara Valley Habitat Agency as they seek to obtain mitigation coverage by paying VHP impact fees for several SMP-3 activities through the VHP amendment.

ii. Question about the aquatic herbicide application work projections slide- how much of the remainder of SMP-2 projections (in terms of mileage) in comparison to SMP-2 actual work completed (mileage values only shown for work completed through 2020) will be conducted under SMP-3? Does VW have an annual rate for aquatic herbicide application work?
   - J. Lewis response: The aquatic herbicide application needs can vary from year to year so VW cannot precisely provide a prediction at this time.

iii. Could you describe the notification process? How many days of advance notification does VW provide before work is done? Is there a public process once notification occurs?
   - A. Chan response: The Notification process described earlier is just between VW and regulatory agencies. The Notification report is provided to regulatory agencies by April 15 each year. VW also notifies the general public before commencing work in June via mailers and by posting updates to the SMP website.

iv. How is equity considered in the prioritization maintenance?
   - J. Lewis response: VW reviews each channel facility to determine the maintenance needs. VW studied the various communities in which SMP maintenance occur and did not find any differences in how work is conducted across Santa Clara County.

v. How will large woody debris be addressed? Are you proposing that into one of these 6 primary activities?
   - A. Chan response: Large woody debris management is referred to as downed tree management in the SMP-3 Manual.

vi. What size storm is Valley Water maintaining for?
   - A. Chan: Valley Water generally maintains facilities according to the level of service (LOS) flows established for their channel facilities. The Maintenance Guidelines help inform when maintenance is recommended.

vii. Why weren't bioengineering methods used to restore that channel in the previous example (shown in presentation)?
   - A. Chan: Valley Water does consider bioengineering methods when considering treatment methods for each bank repair. The selected treatment is based on multiple site-specific conditions (e.g., hydraulics, soils, flow, etc.). While I do now know the exact reasons why a bioengineering method was not used in the example shown in the PowerPoint, VW likely determined that bioengineering treatments were not suitable at that site and some channel hardening was needed.

viii. Do slopes get revegetated?
   - A. Chan: Yes, slopes do get revegetated in accordance with the SMP BMPs. VW typically uses hydroseeding.

ix. Is there a policy that prevents use of herbicides in streams or next to stream channels?
   - A. Chan/J. Lewis: VW utilizes aquatic herbicides within channels and adjacent to channels that are approved by state and federal agencies.

x. Is there a list of plant/tree species that are maintained to be removed and vice versa?
   - A. Chan: Yes, the SMP-3 Manual includes a list of invasive plant species that are monitored which helps guide invasive plant removal activities.

xi. Does Valley Water allow the use of herbicides?
   - A. Chan: Yes, the Program includes herbicide application in conjunction with mechanical and hand treatment removal methods. VW only uses herbicides approved by CA Department of Pesticide Regulation and complies with several herbicide application BMPs to avoid/minimize impacts on water quality and sensitive resources.

xii. Please clarify why the invasive plant management program is proposed for being taken out of SMP-3.
   - A. Chan/ J. Lewis: Valley Water is in the process of developing a countywide Integrated Invasive Plant Management Program. However, until that countywide program developed, Valley Water still plans to conduct invasive plant removal work as a vegetation management activity under the SMP-3.

xiii. What type of training does Valley Water staff receive to determine flow conveyance?

J. Lewis: VW has civil engineers and hydrologists that are trained to determining flow conveyance needs for VW's facilities.

NATIVE AMERICAN HERITAGE COMMISSION

Governor's Office of Planning & Research

May 27 2022

STATE CLEARINGHOUSE

May 27, 2022

Billy Williams
Santa Clara Valley Water Distric
5750 Almaden Expressway
San Jose, CA 95118

Re: 2022050564, Stream Maintenance Program Renewal Project, Santa Clara County

Dear Mr. Williams:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

PARLIAMENTARIAN
Russell Attebery
Karuk

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Sara Dutschke
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COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

California Department of Transportation

DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

June 24, 2022

SCH #: 2022050564
GTS #: 04-SCL-2022-01061
GTS ID: 26609
Co/Rt/Pm: SCL/VAR/VAR

Billy Williams, Environmental Planner
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Re: Stream Maintenance Program Renewal Notice of Preparation (NOP) for Draft Environmental Impact Report (DEIR)

Dear Billy Williams:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Stream Maintenance Program Renewal project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the May 2022 NOP.

Project Understanding

The Stream Maintenance Program is a routine maintenance program implemented to reduce flood risks, ensure structural integrity of Valley Water facilities, enhance ecologic function, and ensure public safety. The Stream Maintenance Program Renewal involves five categories of work activities: vegetation management, sediment removal, bank stabilization, management of animal conflicts, large woody debris management, and minor maintenance.

Construction-Related Impacts

Potential impacts to Caltrans' Right-of-Way (ROW) from project-related temporary access points should be analyzed. Mitigation for significant impacts due to construction and noise should be identified. Increases or changes to stream flow should not impact Caltrans' ROW. Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, visit: https://dot.ca.gov/programs/traffic-operations/transportation-permits. Prior to construction, coordination may be required

with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to the State Transportation Network (STN).

Equitable Access
If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As well, the project must maintain bicycle and pedestrian access during construction. These access considerations support Caltrans' equity mission to provide a safe, sustainable, and equitable transportation network for all users.

Encroachment Permit
Please be advised that any permanent work or temporary traffic control that encroaches onto Caltrans' ROW requires a Caltrans-issued encroachment permit. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application package, digital set of plans clearly delineating Caltrans' ROW, digital copy of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement. Your application package may be emailed to D4Permits@dot.ca.gov.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, or for future notifications and requests for review of new projects, please email LDR-D4@dot.ca.gov.

Sincerely,

Mark Leong

MARK LEONG
District Branch Chief
Local Development Review

c: State Clearinghouse

From: Sewell, Liz
To: Billy Williams
Subject: FW: Valley Water Stream Maintenance Program Renewal Notice of Preparation
Date: Friday, June 24, 2022 3:31:31 PM
Attachments: image002.png
SMP3_NOP.pdf

Hi Billy,

My name is Liz Sewell and I am the new Trail Manager for the City of San Jose. Last week, Yves Zsutty sent me a meeting thread regarding Valley Water Stream Maintenance Program. Can you please include me in any future meetings regarding the scope and content of the environmental information to be included in the EIR? Thank you!

Liz

From: Zsutty, Yves <Yves.Zsutty@sanjoseca.gov>
Sent: Wednesday, June 15, 2022 12:36 PM
To: Sewell, Liz <Elizabeth.Sewell@sanjoseca.gov>

From: Billy Williams <BWilliams@valleywater.org>
Sent: Wednesday, June 15, 2022 12:04 PM
To: Billy Williams <BWilliams@valleywater.org>
Subject: FW: Valley Water Stream Maintenance Program Renewal Notice of Preparation

You don't often get email from bwilliams@valleywater.org. Learn why this is important

[External Email]

Hello,

Please see links below for the ZOOM and Facebook options for participation at tomorrow's SMP-3 NOP scoping meeting

Zoom via https://valleywater.zoom.us/j/83869223063

Facebook through the Valley Water page: https://www.facebook.com/SCVWD/

From: Billy Williams
Sent: Thursday, May 26, 2022 3:54 PM

To: Billy Williams BWilliams@valleywater.org
Cc: Allison Chan <allison@horizonh2o.com>; Jeffrey Lewis <JLewis@valleywater.org>; Jon Jankovitz <JJankovitz@valleywater.org>; Tamra Zozaya <tzozaya@valleywater.org>
Subject: Valley Water Stream Maintenance Program Renewal Notice of Preparation

Good Afternoon,

This email is to notify you that the Santa Clara Valley Water District (Valley Water), as the lead agency, is preparing a subsequent environmental impact report (SEIR) for our Stream Maintenance Program Renewal. Valley Water would like input from your agency regarding the scope and content of the environmental information to be included in the EIR. Please see the attached Notice of Preparation (NOP) for further information on the Stream Maintenance Program Renewal including a description of the maintenance activities, location, and potential environmental effects.

In order for the public and regulatory agencies to have an opportunity to ask questions and submit comments on the scope of the SEIR, a public scoping meeting will be held during the NOP review period. The scoping meeting will solicit input from the public and interested public agencies regarding the nature and scope of environmental impacts to be addressed in the Draft SEIR. The meeting will be held on **June 16, 2022 at 5:30 p.m.** at the Santa Clara Valley Water District's Headquarters Building Boardroom (5700 Almaden Expressway, San Jose, CA 95123) as well as available via ZOOM.

We appreciate your engagement in the CEQA process and look forward to receiving any comments and questions.

BILLY WILLIAMS
Senior Environmental Planner
bwilliams@valleywater.org
Tel. (408) 630-2090

SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

Clean Water · Healthy Environment · Flood Protection

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Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Jared Blumenfeld
Secretary for
Environmental Protection

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

June 24, 2022

Mr. Billy Williams
SMP Renewal Scoping Comments
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
BWilliams@valleywater.org

NOTICE OF PREPARATION OF A DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT FOR THE STREAM MAINTENANCE PROGRAM RENEWAL – DATED MAY 2022 (STATE CLEARINGHOUSE NUMBER: 2022050564)

Dear Mr. Williams:

The Department of Toxic Substances Control (DTSC) received a Notice of Preparation of a Draft Subsequent Environmental Impact Report (DSEIR) for the Stream Maintenance Program Renewal (Project). The Lead Agency is receiving this notice from DTSC because the Project includes one or more of the following: presence of site structures that may require demolition or modifications, and/or importation of backfill soil.

DTSC recommends that the following issues be evaluated in the Hazards and Hazardous Materials section of the DSEIR:

1. If buildings or other structures are to be demolished on any project sites included in the proposed project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing materials, and polychlorinated biphenyl caulk. Removal, demolition and disposal of any of the above-mentioned chemicals should be conducted in compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings or other structures should be conducted in accordance with DTSC's 2006 *Interim Guidance Evaluation of School Sites with Potential Contamination from Lead Based Paint, Termiticides, and Electrical Transformers*.

2. If any projects initiated as part of the proposed project require the importation of soil to backfill any excavated areas, proper sampling should be conducted to ensure that the imported soil is free of contamination. DTSC recommends the imported materials be characterized according to *DTSC's 2001 Information Advisory Clean Imported Fill Material*.

DTSC appreciates the opportunity to comment on the DSEIR. Should you need any assistance with an environmental investigation, please visit DTSC's Site Mitigation and Restoration Program page to apply for lead agency oversight. Additional information regarding voluntary agreements with DTSC can be found at DTSC's Brownfield website.

If you have any questions, please contact me at (916) 255-3582 or via email at Brian.McAloon@dtsc.ca.gov.

Sincerely,



Brian McAloon
Project Manager
Site Evaluation and Remediation Unit
Site Mitigation and Restoration Program
Department of Toxic Substances Control

cc: (via email)

Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Mr. Dave Kereazis
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

From:	Connolly, Mark
To:	Billy Williams
Subject:	FW: Valley Water Stream Maintenance Program Renewal Notice of Preparation
Date:	Monday, June 27, 2022 4:40:59 PM
Attachments:	image001.png SMP3_NOP.pdf

Mr. Williams-

Please accept these comments from the County of Santa Cara regarding the supplemental notice of comment for the SMP program project.

Please ensure that all areas of the project conducted within the County Habitat Conservation Plan Area are checked for coverage with the County Planning Office geobrowser, or Habitat agency.

Please notify the County for any trees that are removed on County owned land or County Right-of-Ways.

Thank you,

Mark J. Connolly | Senior Planner, Deputy Zoning Administrator
Airport Land Use Commission Planning Program Manager
Department of Planning and Development
County of Santa Clara
70 West Hedding Street, East Wing, 7th Floor | San José, CA 95110
Phone: (408) 299-5786

Please note that the Department has procedures for electronic submittals.Please check our website at https://www.sccgov.org/sites/dpd/Pages/DPD.aspx for updates.

Due to the immediate need of the Department of Planning and Development staff to support the County-wide effort regarding the COVID-19 Pandemic; there will be a delay in our ability to respond to telephone calls and emails.

Please visit our website.
Click here to look up unincorporated property zoning information.
Questions on the status of your permit? Please e-mail: PLN-PermitCenter@pln.sccgov.org

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Sent via electronic mail: No hard copy to follow

July 8, 2022

Santa Clara Valley Water District
Attn: Billy Williams
SMP Renewal Scoping Comments
5750 Almaden Expressway
San Jose, CA 95118
Email: BWilliams@valleywater.org

Subject: **Santa Clara Valley Water District Stream Maintenance Program Renewal, Notice of Preparation of Subsequent Environmental Impact Report, Santa Clara County (State Clearinghouse No. 2022050564**)

Dear Ms. Williams:

The San Francisco Bay Regional Water Quality Control Board (Water Board) appreciates the opportunity to comment on the Notice of Preparation (NOP) of a Subsequent Environmental Impact Report (SEIR) for Santa Clara Valley Water District's (Valley Water's) Stream Maintenance Program Renewal (Project), prepared by Valley Water (SCH No. . Thank you for extending the comment period to July 8, 2022.

Since 2002, Valley Water has implemented the Stream Maintenance Program (SMP) under authorization from the Water Board, pursuant to the Clean Water Act, section 401, and California Water Code regulations for discharges of dredged or fill material (currently under Water Board Order No. R2-2020-0017 (SMP Order)). In accordance with the SMP, Valley Water manages about 275 miles of streams with routine maintenance activities to reduce flood risks, ensure structural integrity of Valley Water facilities, and protect public safety. SMP goals also include enhancement of ecological functions of wetlands and streams. The SMP covers wetlands and other waters below the 1,000-feet elevation contour in Santa Clara County, consisting of (west to east) the Lower Peninsula, West County, Guadalupe River, and Coyote Creek watersheds that are in the San Francisco Bay Regional Water Board jurisdiction, and a portion of the Pajaro River watershed which is in the Central Coast Regional Water Board jurisdiction.

The final SEIR will inform a revision to the SMP Manual, which contains the limits, methods, and procedures, for Valley Water to implement the SMP maintenance activities. The Water Board adopted the SMP Manual with the SMP Order. As stated in the NOP, the Manual will be updated with modifications to maintenance techniques and activities, work limits, and best management practices (BMPs). The Project is intended to cover the 2024-2033 period. With each SMP cycle spanning 10 to 12 years, the proposed Project is referred to as SMP-3, while the present SMP cycle is SMP-2 covering 2014-2023. Valley Water intends for this planning process to also include updating the SMP's environmental compliance documentation and renewing the SMP permits from the Water Board and other agencies.

As a responsible agency pursuant to California Environmental Quality Act (CEQA), we offer the following comments on the NOP to provide feedback on the Project's potential environmental effects and potential alternatives to avoid and minimize these impacts to aquatic resources. While our comments are applicable to the streams in the San Francisco Bay Water Board jurisdiction, we coordinate with Central Coast Water Board staff for consistency, as appropriate.

Comments

Comment 1. Project Description Including Proposed Changes to the Stream Maintenance Program

The proposed Project would have the following maintenance categories:

1. Sediment removal
2. Vegetation management
3. Bank stabilization
4. Management of animal conflicts
5. Minor maintenance
6. Downed tree management

The SEIR Project description should clearly characterize each maintenance category. The description should address the potential for dredged, excavation, and/or fill discharges, and other impacts to water quality in waters of the State, and describe how unavoidable impacts would be mitigated, especially in the context of issues in Comment 2 for compliance with the Water Board's requirements.

Examples of direct impacts to waters of the State from SMP maintenance activities include modifications to a water's substrate by hardening the bed or banks, habitat degradation by removing vegetation, and release of pollutants from construction vehicles. Examples of indirect impacts include removal of vegetation that provides shade, nesting habitat for birds and shelter for many types of wildlife, and nutrient cycling in a water's ecosystem. As a result of such impacts (and others), the SMP maintenance activities may adversely impact the beneficial uses of the affected waters including (but not limited to) cold freshwater habitat (COLD), warm freshwater habitat (WARM), estuarine habitat (EST), fish migration (MIGR), preservation of rare and endangered species (RARE), and spawning habitat (SPWN).

There are changes proposed for SMP-3 that should be clearly characterized in the SEIR. The following list of proposed changes are from three sources, but this list may be inaccurate or incomplete. We therefore urge Valley Water to clearly stipulate and characterize the proposed changes to the SMP in the SEIR so that the reviewers may understand and comment on the potential environmental impacts of the Project in the draft SEIR. This list is based on three sources: (1) the NOP filed with the California Department of Research and Planning (OPR) which manages CEQA documentation for the state; (2) the presentation and discussion from the scoping meeting with agencies that Valley Water convened on June 14, 2022, attended by staffs of the San Francisco Bay and Central Coast Water Boards, the California Department of Fish and Wildlife (CDFW), the Bay Conservation and Development Commission (BCDC), and the U.S. Environmental Protection Agency; and (3) the meeting notes from the agency meeting of June 28, 2022, that Valley Water convened with the U.S. Army Corps of Engineers (Corps) and the National Marine Fisheries Service (NMFS).

Proposed Changes to the Stream Maintenance Program (SMP)

- Additions to the SMP
  - Perform work at maintenance yards
  - Install and maintain trash booms
  - Mitigate unavoidable impacts via the Santa Clara Valley Habitat Plan
- Other modifications to the SMP
  - Eliminate the maximum size limit for trees that may be removed of 12 inches diameter at breast height (i.e., remove trees of any size)
  - Update the Program BMPs
  - Perform encampment/trash clean-up
  - Expand permanently mitigated areas
  - Retain the stream classification scheme with "modified" and "unmodified" categories, but eliminate the "modified with ecological value" category
  - Prepare Reach Characterization Sheets
  - Remove mitigation approach via invasive plant management
  - Eliminate maintenance of fish ladders and fish screens

Comment 2. Avoidance & Minimization of Impacts, Alternatives Analysis, and Compensatory Mitigation

CEQA review for the Project will inform Valley Water's application to the Water Board for a water quality certification and waste discharge requirements pursuant to Clean Water Act, section 401 and California Water Code (Certification). In order for us to issue a Certification for the Project, Valley Water will need to show how the Project avoids and minimizes impacts to wetlands and other waters of the State to the extent feasible.

Specifically, the Water Board adopted U.S. EPA's CWA Section 404(b)(1) "Guidelines for Specification of Disposal Sites for Dredge or Fill Material," dated December 24, 1980 (Guidelines), in its *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) for determining the circumstances under which filling of wetlands, streams, or other waters of the State may be permitted. Additionally, the State Water Resources Control Board adopted *Procedures for the Discharge of Dredged or Fill Materials to Waters of the State* (Procedures) on April 2, 2019. The Procedures incorporated the Guidelines and detail the procedures for the submission, review, and approval of applications for activities that could result in the discharge of dredged and fill material to waters of the State.

The Guidelines prohibit all discharges of fill material into regulated waters of the unless a discharge, as proposed, constitutes the least environmentally damaging practicable alternative (LEDPA) that will achieve the basic project purpose. As such, before issuing a Certification for the Project, we need to be able to find that the Project has avoided and minimized impacts to the maximum extent practicable as described in the Basin Plan Section 4.23.4 and the Procedures.

The existing SMP has a host of best management practices that help Valley Water to avoid and minimize impacts to waters of the State, such as work window restrictions; per-project, annual, and programmatic limits to dredged, excavated, and fill discharges; pre-construction surveys; and special status species avoidance and protection measures. Project planning, including avoidance and minimization of impacts, is informed by the stream-specific maintenance

guidelines for engineered (modified) streams and for unmodified stream to the extent feasible. It is our expectation that Valley Water will continue to develop, refine, and update, the Maintenance Guidelines as living documents under SMP-3, and this should be addressed in the SEIR. Information in the NOP and agency scoping meetings indicate there will be changes to the SMP BMPs, but these changes have not yet been described. The SEIR should clearly characterize proposed changes to the BMP program.

Compensatory Mitigation

Some of the SMP activities cause unavoidable adverse impacts to waters of the State despite the avoidance and minimization measures used. Therefore, the SMP appropriately includes compensatory mitigation of impacts to waters of the State, and mitigation to address the requirements of other agencies including the Corps, NMFS, CDFW, BCDC, and the U.S. Fish and Wildlife Service. As summarized in the Basin Plan and the Procedures, compensatory mitigation is required for a project with unavoidable impacts to ensure the project meets the California Wetlands Conservation Policy requirements. The primary goal of the California Wetlands Conservation Policy is to ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of acreage and functions of waters of the State.

There are significant changes proposed for SMP compensatory mitigation that should be characterized in the SEIR. The Project proposes to modify SMP compensatory mitigation by removing the existing Invasive Species management Program (IPMP) from the SMP and adding the Santa Clara Valley Habitat Plan (VHP) as means for mitigation. We do not object to removal of the IPMP given Valley Water indicated that it intends to develop a separate program for invasive plant management. We look forward to participating in the planning process for that program.

The VHP, however, would not be acceptable to the Water Board for mitigation of the SMP activities. The standard mitigation mechanism under the VHP would not provide the kind of tracking that the Water Board needs to identify specific mitigation projects for approved impacts. Only an in-lieu fee (ILF) program could provide for tracking that the Water Board requires to ensure no net loss in waters of the State and compliance with the California Wetlands Conservation Policy requirements. At this time, since the ILF program is not yet developed, we would be unable to issue a Certification for the Project. Even after the Habitat Agency's ILF program is approved by the agencies, there is likely to be a deficit of mitigation credits for riparian impacts in Santa Clara County. This is important to point out because the VHP is meant to serve many parties, not just Valley Water.

Moreover, the VHP does not currently cover fish or riparian waters. As such, the SMP will require other means for compensatory mitigation of impacts to creeks and fish. We recommend Valley Water develop and implement restoration projects that have watershed- or reach-scale benefits instead of relying on the VHP. To that end, the SEIR should include additional proposals for compensatory mitigation other than the VHP. This would also facilitate our ability to timely issue a Certification for the Project.

Holistic Approach for Compensatory Mitigation with Stakeholder Coordination

Because the proposed Project lacks a viable mitigation plan given that the VHP would not meet the Water Board’s requirements, we encourage Valley Water to develop watershed- and reach-scale mitigation projects that could provide multiple, long-term benefits to offset the SMP impacts. This approach could potentially mitigate for recurring SMP impacts as well as other impacts under Valley Water’s purview. We recognize that this approach for mitigation would

likely need to entail interdepartmental planning, scheduling, and financing among Valley Water's different divisions, and may also include other agencies such as the local municipalities and land owners, and Native American Tribes of the affected lands, wetlands, and streams. We recommend that Valley Water meet with us and the other agencies and stakeholders to vet this issue and potentially identify specific, viable projects to address a holistic approach for compensatory mitigation.

Comment 3. Trend Analyses of Recurring Impacts; Climate Change Effects on the SMP

We recommend the SEIR include analyses of trends in SMP activities to identify recurring impacts or problematic zones that could benefit from watershed-based solutions that may entail a capital improvement project, thereby reducing the future maintenance needs. An example is a capital project to modify hydraulic constrictions that result in significant sediment deposition requiring maintenance.

The SEIR should also include analyses of climate change effects on the SMP such as increasing storm intensity, sea level rise, and warmer temperatures. Such effects should be considered for maintenance procedures and methods, as well as for planning mitigation of SMP impacts.

Comment 4. Specific Comments on Changes to the Stream Maintenance Program

As noted in Comment 1, the proposed Project would significantly modify the existing SMP. As such, the SEIR should provide details to clarify the changes to the SMP (i.e., the differences between SMP-2 and SMP-3). Please note that even though we listed several changes proposed to the SMP in Comment 1, the list may be inaccurate and incomplete. Therefore, the SEIR should clearly identify the differences between SM-2 and the proposed Project for SMP-3.

To address the items listed in Comment 1 for SMP changes, as well as any other proposed change to the SMP, the SEIR should include details to characterize the item and explain how the item may result in adverse impacts to waters of the State, and/or contributes to meeting the California Wetlands Conservation policy and no net loss of acreage, functions, and values of waters of the State. The SEIR should also address (***but not be limited to***) specific comments below:

- Work in maintenance yards. Define "maintenance yard" and why Valley Water proposes this category for inclusion with the SMP. Provide maps for maintenance yard locations and the proximity of each yard to waters of the State (including groundwater). Describe the activities proposed for working at maintenance yards, and measures to prevent discharges to waters of the State or other potential impacts or discharges to waters of the State.

- Trash booms. Describe trash boom types, dimensions, and installation methods. Provide maps to show the locations for trash booms. Describe the operations and maintenance of trash booms.

- Mitigation via the Santa Clara Valley Habitat Plan. See Comment 2.

- Tree removals. The proposed change to vegetation management that would eliminate the 12-inch dbh size threshold for tree removals has also been referred to as the "Hazard Tree Program" and "Removal of Downed Trees." The SEIR should clearly describe the changes to vegetation management, and should distinguish between a hazardous tree, and a downed tree. To ensure that hazardous tree removals or downed tree removals would not diminish the existing SMP category for Management of Large Woody Debris, the SEIR

should clearly describe how the Management of Large Woody Debris category in SMP-2 will be retained in SMP-3.

- Update the program BMPs. Please provide details for the proposed changes.

- Perform encampment/trash clean-up. Provide details for how this activity would contribute to no net loss and meet the California Wetland Conservation Policy.

- Expand Permanently Mitigated Areas. Provide details for how this activity would contribute to no net loss and meet the California Wetland Conservation Policy.

- Stream Classification Scheme. This change would retain the "modified" and "unmodified" categories for classifying a stream but would eliminate the "modified with ecological value" category. Clarify in the SEIR how this would affect SMP activities and mitigation of SMP impacts in a modified or unmodified stream. We support removal of "modified with ecological value" because it suggests that there are stream reaches that, if modified, have no ecological value. This is not consistent with the beneficial uses of a stream pursuant to the Basin Plan.

- Reach Characterization Sheets. The Reach Characterization Sheets sound similar to the Maintenance Guidelines required for SMP-2, pursuant to the SMP Order, but in a distilled format of the Maintenance Guidelines. Please clarify the Reach Characterization Sheets and how they will be used for SMP maintenance planning, implementation, and/or mitigation. Regarding Maintenance Guidelines, the SMP would help to quantify maintenance needs for particular stream reaches, for example by determining stream flood flow capacity in real world conditions as opposed to evaluating it based on as-built plans. For instance, applying a Maintenance Guideline could allow for reduced frequency of vegetation management where field inspections and hydraulic analyses of existing conditions reveal that a stream has a greater tolerance of vegetation growth than the as-built design criteria. A Maintenance Guideline should be refined with updated stage-discharge criteria (pursuant to the SMP Order) and other empirical observations. The Maintenance Guideline requirements should be retained in the Project; accordingly, the SEIR should address this and how it is related to the Reach Characterization Sheets, as appropriate. (As noted in Comment 1, we expect that the existing Maintenance Guidelines procedures and document development will be retained in the Project.)

- Invasive Plant Management Program (IPMP). The IPMP is proposed to be removed from the SMP as a mitigation approach but in the NOP, section 4.1, includes invasive plant management. Please clarify the proposed maintenance activities for non-native invasive plant species management. Also, see Comment 2 for this topic.

- Eliminate maintenance of fish ladders and fish screens. Routine maintenance of fish ladders and screens has been covered since 2002 but Valley Water proposes to remove this activity from the proposed Project, according to the meeting notes of June 28. This raises a serious concern because a gap in fish ladder and fish screen maintenance poses a risk of degradation to beneficial uses including MIGR, SPWN, RARE, COLD, and WARM. The SEIR should discuss the reasoning behind the removal from the SMP. Our preference would be for these maintenance activities to be retained in SMP-3.

Closing

We appreciate Valley Water's coordination with us and would welcome opportunities to participate in additional meetings with Valley Water and other authorizing agencies and stakeholders as details of the Project are developed, and to discuss our comments on the SEIR. If you have any questions, please contact Susan Glendening of my staff at (510) 622-2462 or by email to susan.glendening@waterboards.ca.gov.

Sincerely,

Elizabeth Morrison
Digitally signed by Elizabeth Morrison
Date: 2022.07.08 16:14:10 -07'00'
Water Boards

Elizabeth Morrison
Senior Environmental Scientist
Watershed Management Division

Cc: State Clearinghouse, State.Clearinghouse@opr.ca.gov

JCodianne@valleywater.org

brenda.goeden@bcdc.ca.gov

gary.stern@noaa.gov
Darren.howe@noaa.gov

katerina.galacatos@usace.army.mil
sarah.m.firestone@usace.army.mil

CHIEF EXECUTIVE OFFICE

Jody L. Hayes
CHIEF EXECUTIVE OFFICER

Patrice M. Dietrich
ASSISTANT EXECUTIVE OFFICER

Tina M. Rocha
ASSISTANT EXECUTIVE OFFICER

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

June 27, 2022

Billy Williams
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

SUBJECT: ENVIRONMENTAL REFERRAL – STREAM MAINTENANCE PROGRAM RENEWAL

Mr. Williams.:

Thank you for the opportunity to review the above-referenced project.

The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and has no comments at this time.

The ERC appreciates the opportunity to comment on this project.

Sincerely,

Patricia Lord
Management Consultant
Environmental Review Committee

PL:ah

cc: ERC Members

1010 10TH STREET, STE. 6800, MODESTO, CA 95354
POST OFFICE BOX 3404, MODESTO, CA 95353
PHONE: 209.525.6333, FAX: 209.558.4423
STANCOUNTY.COM

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 6, 2022

Billy Williams
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686
BWilliams@valleywater.org

Subject: Stream Maintenance Program Renewal, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2022050564, Santa Clara County

Dear Billy Williams:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) of a Subsequent Draft Environmental Impact Report (SDEIR) from the Santa Clara Valley Water District (Valley Water) for the Stream Maintenance Program Renewal (Project) pursuant the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.; hereafter CEQA; Cal. Code Regs., § 15000 et seq.; hereafter CEQA Guidelines).

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code. In an email from you on June 21, 2022, CDFW received an extension to the deadline to provide comments from June 7, 2022 to July 8, 2022.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As

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proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

Proponent: Valley Water

Objective: The purpose of the proposed Project is to continue stream maintenance activities (e.g., sediment removal, bank stabilization, vegetation management, etc.) that are necessary to reduce flood risks, ensure structural integrity of Valley Water's facilities, enhance ecologic function, and ensure public safety.

The previous Environmental Impact Report (certified in 2002) covered activities of the Stream Maintenance Program (SMP) for the past 20 years as part of SMP-1 (2002 - 2011) and SMP-2 (2012 – 2022).

Location: The Project generally covers Santa Clara County, CA below the 1,000-foot elevation contour.

Timeframe: The Project is intended to cover a 10-year planning period between 2024 and 2033.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist Valley Water in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Based on the potential for the Project to have a significant impact on biological resources, CDFW concludes that a Subsequent Environmental Impact Report is appropriate for the Project.

I. Project Description

Comment #1: The CEQA Guidelines (§§15124 and 15378) require that the draft EIR incorporate a full Project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact (CEQA Guidelines, §§ 15124 and 15378).

Issue: Without a clear and concise description of the Project and potential foreseeable phases of the Project, it is challenging for CDFW to provide sufficient review of the

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NOP, assess all potential impacts of the Project, and provide adequate mitigation measures to offset the impacts.

Specific impacts: Project activities, such as sediment and vegetation removal, bank stabilization, large woody debris removal, etc., could result in permanent and/or temporary loss of habitat types such as freshwater and saline wetlands, riparian, and stream habitat; and disturbance, injury, and/or mortality of terrestrial, semi-aquatic, and aquatic species. Project activities also have the potential for sediment, debris, deleterious materials to enter into the stream and temporary increases in turbidity.

Why the impact would occur: The proposed Project includes activities such as removing sediment from streambeds, repairing streambanks with hardscape or other methods, removing vegetation, etc.

Evidence impact would be significant: Project activities could alter habitat types with unnatural materials and/or remove resources that could serve as habitat for various species as well as create conditions that would be unfavorable to species. For example, removing sediment from streambeds could result in temporary increases in turbidity, loss of potential habitat, and disturbance to nesting birds.

Recommendation 1: The SDEIR should include a detailed description of each type or category of Project activities, including approximate number of projects per year, construction schedule, equipment, crew sizes, and operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features, in order for CDFW to evaluate and assess impacts that may occur from Project activities.

Recommendation 2: CDFW regional staff have participated in meetings and discussions with Valley Water, Santa Clara Valley Habitat Agency, which implements the Santa Clara Valley Habitat Conservation Plan and Natural Community Conservation Plan (Habitat Plan or HCP/NCCP), U.S. Fish and Wildlife (USFWS) and other resource agencies in incorporating the Project as a covered program in the Habitat Plan. CDFW recommends that detailed information be included in the SDEIR on specific activities proposed for coverage, Habitat Pan land cover types affected, types (permanent or temporary), location and frequency of impacts, Habitat Plan conditions to be followed or developed, and mitigation options. The SDEIR should describe the expected timeframe for coverage of activities during the Habitat Plan amendment process.

Recommendation 3: The NOP states that Valley Water updated SMP in 2011 (SMP 2) to reflect the 2012 through 2022 planning period, and a subsequent EIR for SMP 2 was certified in 2012. During agency meetings to discuss SMP, Valley Water presented an SMP 2 timeline of 2014-2023. Since SMP 3 is expected to cover activities from 2024-

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2033, the SDEIR should clarify the timeline for the SMP update and explain Valley Water's expectations for coverage of stream maintenance activities if a gap may exist between the terms of coverage of SMP 2 and SMP 3.

II. Environmental Setting

Comment #2: The Project location covers a large geographic area within Santa Clara County where various special-status species, nesting birds, and rare plants may occur.

Issue: Special-status species, nesting birds, and rare plants may occur within the Project area and without appropriate mitigation measures, the Project could potentially have a significant impact on these species. Special-status species that may be present within the Project area, include, but is not limited to, those listed below:

- Salt-marsh harvest mouse (*Reithrodontomys raviventris*) – State Endangered (SE) and Fully Protected (FP), Federal Endangered (FE)
- California black rail (*Laterallus jamaicensis coturniculus*) – State Threatened (ST) and FP
- California Ridgway's rail (*Rallus obsoletus obsoletus*) – SE and FP
- White-tailed kite *(Elanus leucurus*) – FP
- Tricolored blackbird (*Agelaius tricolor*) – ST
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) – State Species of Special Concern (SSC)
- Western burrowing owl (*Athene cunicularia*) – SSC
- Western pond turtle (*Emmys marmorata*) – SSC
- Alameda song sparrow (*Melospiza melodia pusillula*) – SSC
- California yellow rail (*Coturnicops noveboracensis*) – SSC
- Alkali milk-vetch (*Astragalus tener* var. *tener*) – California Rare Plant Rank 1B.2
- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) – California Rare Plant Rank 1B.2
- Arcuate bush-mallow (*Malacothamnus arcuatus*) – California Rare Plant Rank 1B.2

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- Central California Coast steelhead (*Oncorhynchus mykiss*) – FT
- Longfin smelt (*Spirinchus thaleichthys*) – Federal Candidate and ST
- Pacific lamprey (*Entosphenus tridentatus*) – SSC
- Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*) – SSC
- California roach (*Lavinia symmetricus*) – SSC
- Sacramento hitch (*Lavinia exilicauda*) – SSC
- Monarch butterfly (*Danaus plexippus*) – Federal Candidate
- California tiger salamander (*Ambystoma californiense*) – FT and ST
- California red-legged frog (*Rana draytonii*) – FT and SSC
- Pallid bat (*Antrozous pallidus*) – SSC
- Western red bat (*Lasiurus blossevillii*) – SSC

Specific impact: Without appropriate avoidance measures for special-status species, potentially significant impacts associated with Project activities may include reduced reproductive success; reduced health and vigor; nest abandonment; loss of nest trees, and/or loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young); burrow/den collapse; crushing as a result of burrow collapse; inadvertent entrapment or entrainment; impingement; habitat loss; introduction of non-native species; turbidity; introduction of debris and/or deleterious materials into stream habitats; and direct mortality. Unauthorized take of species listed as threatened or endangered pursuant to CESA or the Native Plant Protection Act is a violation of Fish and Game Code.

Why the impact would occur: The proposed Project includes activities such as removing sediment from streambeds, repairing bank erosion, removing vegetation, use of herbicides, etc. Use of heavy equipment within the stream and riparian corridor would occur.

Evidence impact would be significant: The Project will or may include impacts such as noise, groundwork, and movement of workers that may occur in or directly adjacent to habitat and thus have the potential to significantly impact native species.

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Recommended Potentially Feasible Mitigation Measures

Mitigation Measure #1: Habitat Assessment

A qualified biologist should conduct a habitat assessment in advance of Project implementation, to determine if the Project site or its vicinity contains suitable habitat for special-status species. For species in which habitat corridors are crucial, the habitat assessment should include review of habitat available within the specific Project location and adjacent habitats. If the Project may result in fragmentation of habitat, Project design(s) should be altered to prevent this fragmentation. If fragmentation cannot be avoided, structures should be designed to allow wildlife movement.

Mitigation Measure #2: Special-Status Plant Surveys

The Project area should be surveyed for special-status plant species, including those with a California Rare Plant Rank (http://www.cnps.org/cnps/rareplants/inventory/), by a qualified biologist following protocol-level surveys. Protocol-level surveys, which are intended to maximize detectability, may include identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants, and survey report requirements, available at: https://wildlife.ca.gov/Conservation/Plants.

Mitigation Measure #3: Special-Status Wildlife Species Surveys and Bird Nest Surveys

The Project location should be surveyed for special-status wildlife species by a qualified biologist following protocol-level surveys. Protocol-level surveys are intended to maximize detectability. In the absence of protocol-level surveys being performed, focused surveys for special-status wildlife species presence, nests, or indicators of presence (e.g., bat guano and acoustic surveys) should be conducted. Survey and monitoring protocols and guidelines are available at: https://wildlife.ca.gov/Conservation/Survey-Protocols.

If Project activities are to take place during the avian nesting season, CDFW recommends protocol-level surveys following established methodologies (e.g., point counts, area searches, etc.) be conducted within the Project area by a qualified biologist throughout the nesting season. These surveys should cover a sufficient area where suitable nesting habitat is present as well as an appropriate buffer surrounding nesting habitat. Surveys should be conducted prior to the start of any work that could result in loss of habitat or disturbance to nesting birds. As part of protocol-level surveys, pre-construction surveys should include a minimum of two surveys for active nests with the first survey conducted no more than seven (7) days prior to the start of Project activities, and the second survey conducted 48 hours prior to the start of Project activities.

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Mitigation Measure #4: Impact Analysis

The SDEIR should include complete descriptions of permanent and temporary impacts to habitats and species associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, and/or human presence. The SDEIR should also include appropriate and effective mitigation measures to completely avoid impacts to special-status species and other native plant and wildlife species and natural communities such as those indicated below. If complete avoidance is not feasible, the SDEIR should include minimization measures, and compensatory mitigation to offset all potential impacts.

Mitigation Measure #5: Special-Status Plant Avoidance

Special-status plant species should be avoided through delineation and establishment of a no-disturbance buffer of at least 50 feet from the outer edge of the plant population or specific habitat type required by special-status plant species.

Mitigation Measure #6: Special-Status Wildlife Species and Nesting Bird Avoidance

If special-status wildlife species such as small mammals are found, work activities should stop, and the individual should be allowed to leave the site through its own volition. If Species of Special Concern wildlife species or active bird nests are found within or adjacent to the Project site, the qualified biologist should establish a no-disturbance buffer appropriate for the species and conduct on-site monitoring during all Project-related activities. For nesting birds, the qualified biologist should increase the buffer if the birds are showing signs of unusual or distressed behavior such as defensive flights/vocalizations, standing up from a brooding position, or flying away from the nest. Buffers should be maintained until the eggs have hatched and young have fledged and are completely independent of the nest or roost site.

Mitigation Measure #7: State-listed Species Take Authorization

If State-listed species are identified during surveys and full avoidance of take is not feasible, take authorization through CDFW issuance of an Incidental Take Permit (ITP) would be required.

Mitigation Measure #8: Federally listed Species Consultation

CDFW recommends consulting with the USFWS, and National Marine Fisheries Service (NMFS) if the Project will impact federally listed species. Consultation with the USFWS and NMFS in order to comply with the Federal Endangered Species Act is advised well in advance of Project implementation.

COMMENT #3: The Project occurs within Santa Clara County and activities may occur

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within riparian habitat or other sensitive natural communities.

Issue: The Project area has the potential to contain water features subject to CDFW's lake and streambed alteration authority, pursuant Fish and Game Code § 1600 et seq. Project activities could result in temporary and permanent impacts to these features.

Specific impact: Work within freshwater marsh, wetland, and riparian features has the potential to result in substantial diversion or obstruction of natural flows; substantial change or use of material from the bed, bank, or channel (including removal of riparian vegetation); and deposition of debris, waste, sediment, or other materials into water features causing water pollution that is deleterious to fish and wildlife.

Evidence impact is potentially significant: Construction activities have the potential to impact downstream waters and to significantly impact freshwater marsh, wetland, and riparian communities.

Recommended Potentially Feasible Mitigation Measures

Mitigation Measure #1: Habitat Assessment

A qualified biologist should conduct a habitat assessment in advance of Project implementation, to determine if the Project area or its immediate vicinity supports freshwater marsh, wetland, and/or riparian communities. This survey should include, but not be limited to ponds, creeks or streams, and drainages.

Mitigation Measure #2: Notification of Lake and Streambed Alteration

Fish and Game Code §1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake: (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. CDFW is required to comply with CEQA in the issuance of a Lake and Streambed Alteration Agreement. For additional information, please see https://www.wildlife.ca.gov/Conservation/LSA.

III. Closely Related Past, Present, and Reasonably Foreseeable Probable Future Projects

Comment #4: Valley Water is a water district that implements and plans various projects within Santa Clara County.

Issue: Although activities proposed under the Project may occur within sections of streams and vary in location year to year, the Project may have considerable cumulative impacts within a stream or watershed.

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Specific impact: The SMP has been implemented for approximately 20 years (under SMP 1 and SMP 2) and the proposed Project plans to implement maintenance activities for the next 10 years. Additionally, Valley Water plans to continue to implement other types of larger-scale projects in the future such as flood protection projects, dam retrofits projects, etc., that could further impact a variety of habitat types and species.

Why Impact would occur: Implementation of projects within various habitat types in Santa Clara County.

Evidence impact would be significant: Implementing both small and large-scale construction, maintenance and repair projects will or may include impacts such as noise, groundwork, sediment and deleterious material entering the stream, loss or modification of habitat that could significantly impact native species and their habitats.

Recommendation: The SDEIR should identify reasonably foreseeable future projects in the Project location, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to the impact (CEQA Guidelines, § 15355). Although a project's impacts may be less-than-significant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact, e.g., reduction of habitat for a special-status species should be considered cumulatively considerable.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports be and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENIVORMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

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CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist Valley Water in identifying and mitigating Project impacts on biological resources. Questions regarding this letter or further coordination should be directed to Mayra Molina, Senior Environmental Scientist (Specialist), at (707) 428-2067 or Mayra.Molina@wildlife.ca.gov; or Brenda Blinn, Senior Environmental Scientist (Supervisory), at (707) 339-0334 or Brenda.Blinn@widlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

ec: Office of Planning and Research, State Clearinghouse, Sacramento

San Francisco Regional Water Quality Control Board
Susan Glendening – Susan.Glendening@waterboards.ca.gov

San Luis Obispo Regional Water Quality Control Board
Mark Cassidy – Mark.Cassidy@waterboards.ca.gov

San Francisco Bay Conservation and Development Commission
Brenda Goeden – Brenda.Goeden@bcdc.ca.gov

National Marine Fisheries Service
Gary Stern – Gary.Stern@noaa.gov

U.S. Fish and Wildlife Service
Ryan Olah – Ryan_Olah@fws.gov
Vincent Griego – Vincent_Griego@fws.gov

U.S. Army Corps of Engineers
Katerina Galacatos – Katerina.Galacatos@usace.army.mil
Sarah Firestone – Sarah.M.Firestone@usace.army.mil

Environmental Protection Agency
Luisa Valiela – Valiela.Luisa@epa.gov

Santa Clara Valley Habitat Agency
Edmund Sullivan – Edmund.Sullivan@scv-habitatagency.org

From:	MARSEY KAHN
To:	Billy Williams
Cc:	Bitter, Mary; Cortez, Sandra; Earle, Ted; Guthridge, Dave; Marian Heinkel; Sam Ho; Jahn, Nigel; Bob Jamello; Abhishek Joshi; Pierce, Jodi; Strangis, Jerry; Thousand Oaks San Jose
Subject:	Re: Fwd: Valley Water Stream Maintenance Program Renewal Notice of Preparation
Date:	Wednesday, June 1, 2022 10:06:23 AM
Attachments:	image001.png

Dear Mr. Williams,

Thank you for reaching out to the Thousand Oaks Neighborhood Association as you prepare to draft an SEIR for Valley Water's Stream Maintenance Program renewal. We appreciate the opportunity to share our comments.

The western boundary of the Thousand Oaks neighborhood borders the Guadalupe along Reach 11. Since the 2011 update of the SMP, many changes have occurred, most notably an exponential increase in the presence of homeless encampments in and around the creek bank. This increase in human activity directly impacts the scope of work addressed by the SMP. Human waste, trash and debris grossly pollute the water. Stairways or ramps carved into the creek bank erode and weaken the embankment, contributing to the prospect of future flooding. Open camp fires and use of propane tanks greatly increase the risk of wildfire, endangering both life and property. Human presence in the creek interrupts habitat connectivity for a number of animal species.

It is our understanding the SMP provides routine maintenance necessary to reduce flood risks, enhance ecological function, and ensure public safety. Overall goals have been established and a project list created, consisting of several categories of work activities designed to achieve these goals. An essential component, missing from the work activities, is any specific mention of the unrelenting assault on the environment perpetuated by the presence of encampments.

While vegetation management, sediment removal, and bank stabilization are fundamental to maintaining the integrity of the Guadalupe, real progress cannot be achieved without acknowledging and addressing the serious issues created by human activity in our creeks and waterways. It is our recommendation that work activities currently listed in the SMP be updated to include ***identification and mitigation of negative impacts caused by human habitation***. We believe this to be a crucial addition, necessary for protecting water quality, reducing flood risks, preventing wildfires, enhancing ecological function, and ensuring public safety.

Thank you again for the opportunity to offer our input.

Thousand Oaks Neighborhood Association

---------- Forwarded message ---------
From: **Billy Williams** <BWilliams@valleywater.org>
Date: Thu, May 26, 2022 at 3:54 PM
Subject: Valley Water Stream Maintenance Program Renewal Notice of Preparation
To: Billy Williams <BWilliams@valleywater.org>
Cc: Allison Chan <allison@horizonh2o.com>, Jeffrey Lewis <JLewis@valleywater.org>, Jon Jankovitz <JJankovitz@valleywater.org>, Tamra Zozaya <tzozaya@valleywater.org>

Good Afternoon,

This email is to notify you that the Santa Clara Valley Water District (Valley Water), as the lead agency, is preparing a subsequent environmental impact report (SEIR) for our Stream Maintenance Program Renewal. Valley Water would like input from your agency regarding the scope and content of the environmental information to be included in the EIR. Please see the attached Notice of Preparation (NOP) for further information on the Stream Maintenance Program Renewal including a description of the maintenance activities, location, and potential environmental effects.

In order for the public and regulatory agencies to have an opportunity to ask questions and submit comments on the scope of the SEIR, a public scoping meeting will be held during the NOP review period. The scoping meeting will solicit input from the public and interested public agencies regarding the nature and scope of environmental impacts to be addressed in the Draft SEIR. The meeting will be held on **June 16, 2022 at 5:30 p.m.** at the Santa Clara Valley Water District's Headquarters Building Boardroom (5700 Almaden Expressway, San Jose, CA 95123) as well as available via ZOOM.

We appreciate your engagement in the CEQA process and look forward to receiving any comments and questions.

BILLY WILLIAMS
Senior Environmental Planner

bwilliams@valleywater.org

Tel. (408) 630-2090



SANTA CLARA VALLEY WATER DISTRICT

5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

Clean Water · Healthy Environment · Flood Protection

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Appendix C

General Plan Policies and Ordinances

Appendix C
GENERAL PLAN POLICIES AND ORDINANCES

This appendix provides general plan policies and regulations, and public agency municipal codes and ordinances, from Santa Clara County and jurisdictions within the Program Renewal Area that may be applicable to the Program Renewal.

General Plans are long-range comprehensive plans developed for cities and counties that govern growth and development. The Program Renewal Area is located in Santa Clara County. Although Santa Clara County includes many cities and towns, this analysis focuses on those municipalities directly affected by Program Renewal activities. The following section reviews key land use policies in the General Plans of Santa Clara County as well as the cities of Campbell, Cupertino, Gilroy, Los Altos, Town of Los Altos Hills, Town of Los Gatos, cities of Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, all of which may be relevant to the Program Renewal.

Aesthetics

Santa Clara County

Santa Clara County General Plan (1994)

Book A: Countywide Issues and Policies

Natural Hazards

Strategy #4: Reduce the Magnitude of the Hazard, If Feasible

C-HS 34: Flood control measures should be considered part of an overall community improvement program and advance the following goals, in addition to flood control: …

d. scenic preservation of the County's streams and creeks

Parks and Recreation Chapter

Scenic Highways

Strategy #2: Protect Scenic Highway Corridors

C-PR 37: The natural scenery along many of Santa Clara County's highways should be protected from land uses and other activities which would diminish its aesthetic beauty.

Book B: Rural Unincorporated Area Policies

Resource Conservation Chapter

Scenic Resources

C-RC 57: The scenic and aesthetic qualities of both the natural and built environments should be preserved and enhanced for their importance to the overall quality of life for Santa Clara County.

C-RC 58: The general approach to scenic resource preservation on a countywide basis should include the following strategy:

c. maintaining and enhancing scenic urban settings, such as parks and open space, civic places, and major public commons areas.

Strategy #2: Minimize Development Impacts on Significant Scenic Resources

C-RC 61: Public and private development and infrastructure located in areas of special scenic significance should not create major, lasting adverse visual impacts.

Strategy #3: Maintain and Enhance the Scenic Values of Urban Settings

C-RC 62: Urban parks and open spaces, civic places, and public commons areas should be designed, developed, and maintained such that the aesthetic qualities of urban settings are preserved, and urban livability is enhanced. Natural resource features and functions within the urban environment should also be enhanced.

Regional Parks and Scenic Highway Map Element (2008)

The Regional Parks and Scenic Highway Map Element (Santa Clara County 2008) shows the location of existing County, state, and large city parks, other facilities such as regional open spaces, and proposed parks; state scenic routes, scenic freeways, expressways, arterial, and rural routes, and local roads needing scenic protection; and urban service areas. Policies are described above under "Book A" in the "Parks and Recreation" subsection.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Biological Resources

COS-7.2: Preserve and enhance the aesthetic and habitat value of riparian corridors including the Los Gatos and San Tomas Aquino Creeks.

City Neighborhoods

CHW-6.2: Prioritize the aesthetic quality of city neighborhoods, including neighborhood corridors and entry-points.

Community Design

Action CD-4.3: Design public improvements to meet safety, accessibility, and aesthetic guidelines.

Action CD-4. e: Continue implementing a range of local improvement programs, including, but not limited to, street tree planting, annual clean-up days, sidewalk installation and repair, and similar local activities, to enhance the visual quality of the city.

Open Space, Parks, Trails

Goal COS-1: Maintain a robust network of open space, parks, trails, and recreation facilities that are attractive, well-maintained, safe, and accessible to the community.

Historic Resources

Goal COS-5: Protect and enhance historic resources—including places, buildings, or landmarks with historic, architectural, cultural, and/or aesthetic significance— in order to preserve the city's heritage for future generations.

Safety Element

Goal SA-2.5: Encourage and accommodate multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of Campbell's drainages, creeks, and detention ponds. Where appropriate and feasible, the City shall encourage the use of water detention facilities, such as GSI and LID, for use as groundwater recharge facilities.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Land Use and Community Design Element

Goal LU-2: Ensure that buildings, sidewalks, streets, and public spaces are coordinated to enhance community identity and character.

Goal LU-12: Preserve and protect the City's hillside natural habitat and aesthetic values.

Policy LU-12.4: Hillside Views. The **Montebello** foothills at the south and west boundary of the valley floor provide a scenic backdrop, adding to the City's scale and variety. While it is not possible to guarantee an unobstructed view of the hills from every vantage point, an attempt should be made to preserve views of the foothills.

Gilroy

City of Gilroy 2040 General Plan (2020)

Natural and Cultural Resources Element

Goal NCR 1: Preserve and enhance Gilroy's natural resources for current and future residents.

Policy NCR 1.2: Stream Protection. In concert with the Habitat Plan, protect the ecological, aesthetic, and recreational value of the streams that flow through the Gilroy Planning Area. Areas required for riparian setbacks shall be dedicated to Valley Water in fee or easement, or incorporated into private open space to be preserved and maintained by future development projects. Access to streams should be of sufficient width to accommodate trails, flood control access, and protection of riparian habitat.

Goal NCR 2: Allow residents to enjoy views of the hills, creeks, and habitats that make Gilroy such a beautiful place to live.

Policy NCR 2.1: Scenic Routes. Maintain the scenic character and ecology of the hillsides of the city when designing circulation facilities. Any roadways that must pass through hillside areas will be designed so as to preserve the ecological and scenic character of the hillsides, and high-quality vistas.

Policy NCR 2.2: Scenic Highways. Support the designation of Hecker Pass Highway as an official State Scenic Highway and establish appropriate development controls to ensure longterm protection of its scenic qualities. Controls should establish appropriate setbacks, sign standards, and other development regulations in keeping with State guidelines for the protection of scenic highway corridors.

Policy NCR 2.3: Other Scenic Roadways Protect important scenic qualities and natural features on other roadways in the Planning Area, including Miller Avenue from Uvas Park Drive to Mesa Road.

Community Design Element

Goal LU 8: Support growth and development that preserves and strengthens the City's historic, small-town character; provides and maintains safe, livable, and affordable neighborhoods; and creates beautiful places.

Policy LU 8.13: Limit Light Pollution. Encourage measures to limit light pollution from outdoor sources, and direct outdoor lighting downward and away from sensitive receptors.

Land Use Element

Goal LU 8: Support growth and development that preserves and strengthens the City's historic, small-town character; provides and maintains safe, livable, and affordable neighborhoods; and creates beautiful places.

Policy LU 8.13: Limit Light Pollution. Encourage measures to limit light pollution from outdoor sources, and direct outdoor lighting downward and away from sensitive receptors.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Community Design and Development Element

Goal 1: Preserve and enhance the identity and unique character of Los Altos.

Goal 5: Maintain and enhance the attractiveness of neighborhood shopping centers and businesses throughout the community.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Land Use Element

Goal 4: Provide adequate, reliable utilities and urban services that will protect the health and safety of all residents, while minimizing environmental and aesthetic impacts on the community.

Conservation Element

Policy 6.3: Minimize the removal of vegetation and require replanting to maintain soil stability, prevent erosion, and retain the aesthetic quality of the community.

Open Space and Recreation Element

Policy 1.4: Preserve the natural beauty and minimize disturbance of the natural terrain and vegetation.

Policy 1.5: Preserve the important vistas, such as Monte Bello, Kaiser, Neary and Ewing Hill Ridges, and the hillsides leading to these ridges.

Policy 1.12 Ensure that open space lands achieve the following objectives:

- Preserve visually and environmentally significant open space resources.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Community Design Element

Policy CD-2.34: Sustainable Landscape Design. Encourage landscaping plans to include drought tolerant plants with low water irrigation and to maximize the use of trees for energy efficiency, climate control, screening, shading (especially of parking lots), and aesthetics.

Goal CD-5: Preserve the natural beauty and ecological integrity of the Santa Cruz Mountains and surrounding hillsides.

Environment and Sustainability Element

Goal ENV-1: Promote and protect viewsheds and scenic resources.

Policy ENV-1.1: Scenic Resources. Require design review to prevent developments that, due to their site location and massing, block views from roadways and public spaces in the surrounding hillsides.

Policy ENV-1.4: View Corridor Protection Encourage the protection of key view corridors as described in the Hillside Development Standards and Guidelines to preserve the natural landscape and views of the surrounding hillsides.

Open Space, Parks, and Recreation Element

Policy OSPR-2.1: Hillside Natural Open Space Character. Preserve the natural open space character of hillside lands, including natural topography, native vegetation, wildlife habitats and migration corridors, and viewsheds.

Milpitas

Milpitas 2040 General Plan (2021)

Community Design Element

Policy CD 4-4: Strengthen the aesthetic, environmental and functional links between the city's Specific Plan areas and other surrounding neighborhoods and districts.

Conservation and Sustainability Element

Policy CON 3-2: Preserve and enhance the aesthetic and habitat value of riparian corridors including, but not limited to Coyote, Berryessa and Penitencia Creeks.

Goal CON-5: Protect and enhance historic resources- including places, buildings, or landmarks with historic, architectural, cultural, and/or aesthetic significance.

Parks, Recreation, and Open Space Element

Goal CHW-4: Protect the diversity, safety, and beauty of the City's neighborhoods.

Policy CHW 4-3: Prioritize the aesthetic quality of the public realm in all city neighborhoods, including neighborhood parks, trails, plazas, corridors, and entry-points.

Monte Sereno

Monte Sereno General Plan (2008)

Land Use Element

Policy LU-2.4: Carefully review development in areas of high scenic value.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

City and Neighborhood Form

Goal CNF-8: A visually attractive urban environment.

Goal CNF-11: High quality, aesthetically pleasing, livable, sustainable, well-planned residential neighborhoods, well-connected to neighborhood services.

Goal CNF-19: Distinct, attractive, inviting, and improved gateways to the community.

Policy CNF-19.2: Visual Integrity of Gateways. Enhance the visual integrity of the gateways to the City such as the Madrone area north of Cochrane Road, the Cochrane Road/Monterey Road intersection, Monterey Road south of Watsonville Road, the Cochrane, Dunne, and Tennant freeway interchanges, and the Caltrain station.

Natural Resources and Environment

Policy NRE-1: Natural Features. Preserve outstanding natural features, such as the skyline of a prominent hill and rock outcroppings.

Goal NRE-2: Preservation of hillside areas as open space and scenic features.

Policy NRE-2.1: Hillside and Ridgeline Views. Protect views of hillsides, ridgelines, and prominent natural features surrounding the City. These features help define the City's historic rural character, sense of place, image and identity.

Policy NRE-2.3: Scenic Hillside Preservation. Preserve scenic hillsides around the City in an undeveloped state, wherever feasible. Provide for retention of hillside areas as open space through the dedication and/or purchase

of scenic easements and/or open space easements, transfer of development rights and other appropriate measures.

Goal NRE-5: Preservation and reclamation of streams and riparian areas as open space.

Policy NRE-5.3: Natural State of Streamside and Riparian Areas. Retain natural streamside and riparian areas in their natural state in order to preserve their value as percolation and recharge areas, natural habitat, scenic resources, and recreation corridors, and to stabilize banks. (South County Joint Area Plan 15.08)

Goal NRE-6: Protection of native plants, animals, and sensitive habitats.

Policy NRE-6.4: Tree Preservation and Protection. Preserve and protect mature, healthy trees whenever feasible, particularly native trees, historically significant trees, and other trees which are of significant size or of significant aesthetic value to the immediate vicinity or to the community as a whole.

Mountain View

Mountain View 2030 General Plan (2012)

Parks, Open Space and Community Facilities

Goal POS-3: Open space areas with natural characteristics that are protected and sustained.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Natural Environment Element

Goal N-1: Protect, conserve, and enhance Palo Alto's citywide system of open space, including connected and accessible natural and urban habitats, ecosystems and natural resources, providing a source of public health, natural beauty and enjoyment for Palo Alto residents.

Policy N-1.8: Minimize impacts of any new development on the character of public open space and the natural ecology of the hillsides.

Goal N-2: A thriving urban forest that provides public health, ecological, economic, and aesthetic benefits for Palo Alto.

Policy N-2.1: Recognize the importance of the urban forest as a vital part of the city's natural and green infrastructure network that contributes to public health, resiliency, habitat values, appreciation of natural systems and an attractive visual character which must be protected and enhanced.

Goal N-2: A thriving urban forest that provides public health, ecological, economic, and aesthetic benefits for Palo Alto.

San José

Envision San José 2040 General Plan (2011)

Quality of Life

Goal CD-4: Compatibility. Provide aesthetically pleasing streetscapes and new development that preserves and builds on the unique characteristics of the local area and contributes to a distinctive neighborhood or community identity.

Policy CD-5.5: Include design elements during the development review process that address security, aesthetics and safety. Safety issues include, but are not limited to, minimum clearances around buildings, fire protection measures such as peak load water requirements, construction techniques, and minimum standards for vehicular and pedestrian facilities and other standards set forth in local, state, and federal regulations.

Goal CD-9: Access to Scenic Resources. Preserve and enhance the visual access to scenic resources of San José and its environs through a system of scenic routes.

Land Use and Transportation

Policy LU-16.5: Utilize the aesthetic and cultural qualities of historic resources of all types as means of promoting San José as a place to live, work and visit consistent with the City's economic development goals.

Goal LU-17: Hillside/Rural preservation: Preserve the valuable natural resources of the hillsides and protect their aesthetic and habitat amenities to enhance the rural character of these areas.

Policy LU-17.6: Avoid any new development along ridges and other major hillside areas (typically all properties that exceed 30% slope) that surround the valley floor to minimize visibility of development on these aesthetic resources.

Policy LU-17.9: Maintain design guidelines and policies adopted by the City to guide hillside development, promote aesthetics, and enhance the rural character of hillside areas.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

General Land Use Policies

5.3.1-P1: Preserve the unique character and identity of neighborhoods through community-initiated neighborhood planning and design elements incorporated in new development.

Transition Goals

5.5.2-G2: Preservation of the character of individual neighborhoods.

Saratoga

City of Saratoga 2040 General Plan (2024)

Land Use Element

Goal LU-10: Minimize the visual impacts of hillside development, especially on ridgelines.

Policy LU-10.1: Require development proposals in hillside areas to undertake visual analyses and mitigate significant visual impacts, especially to ridgelines.

Open Space and Conservation Element

Goal OSC-2: Maintain the predominantly small-town residential character of Saratoga, which includes a mix of larger residential parcels, long-established neighborhoods, scenic hillsides, and open space areas.

Policy OSC-2.1: Ensure that all development proposals, public and private, are sensitive to the natural environment and the community's open space resources.

Goal OSC-6: Preserve and protect viewsheds, view corridors, scenic open spaces, and the hillside lands in their natural condition and inherent natural beauty.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Community Character

Goal CC-2: Attractive Street Environment. Create an attractive street environment which will compliment private and public properties and be comfortable for residents and visitors.

Policy CC-5.2: Enhance the visual character of the city by preserving diverse as well as harmonious architectural styles, reflecting various phases of the

City's historical development and the cultural traditions of past and present residents.

Municipal Code and Ordinances

While tree removals have the potential to influence the aesthetic qualities of the Program Renewal Area, Valley Water is not required to follow tree ordinances from Santa Clara County or local jurisdictions within the Program Renewal Area. See "Local Tree Ordinances" under the Biological Resources section, below.

Air Quality

Santa Clara County

Santa Clara County General Plan (Updated 2015)

Health Element – Air Quality and Climate Change Policies:

Policy HE-C.20: Greenhouse gases and air quality. Promote plans and developments that reduce greenhouse gas emissions and result in decreased air pollution, especially for communities with disproportionate exposure to air pollution, and for vulnerable populations such as children, seniors, and those with respiratory illnesses.

Policy HE-G.1: Air quality environmental review. Continue to utilize and comply with the Air District's project- and plan-level thresholds of significance for air pollutants and greenhouse gas emissions.

Policy HE-G.2: Coordination with regional agencies. Coordinate with the Air District to promote and implement stationary and area source emission measures. HE-G.3 Fleet upgrades. Promote Air District mobile source measures to reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero emission and plug-in vehicles. HE-G.4 Off-road sources. Encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.

Policy HE-G.3: Fleet upgrades. Promote Air District mobile source measures to reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero emission and plug-in vehicles.

Policy HE-G.4: Off-road sources. Encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.

Policy HE-G.5: GHG reduction. Support efforts to reduce GHG emissions from mobile sources, such as reducing vehicle trips, vehicle use, vehicle miles traveled (VMT), vehicle idling, and traffic congestion. These efforts may include improved transit service, better roadway system efficiency, state-of-the-art signal timing and Intelligent Transportation Systems (ITS), transportation demand management, parking and roadway pricing strategies, and growth management measures.

Policy HE-G.6: Regional/local plans. Encourage and support regional and local land use planning that reduces automobile use and promotes active transportation.

Policy HE-G.7: Sensitive receptor uses. Promote measures to protect sensitive receptor uses, such as residential areas, schools, day care centers, recreational playfields and trails, and medical facilities by locating uses away from major roadways and stationary area sources of pollution, where possible, or incorporating feasible, effective mitigation measures.

Policy HE-G.8: CARE Communities focus. Promote awareness of geographic areas subject to persistently poorer air quality and assist the Air District in monitoring and reducing emissions from all sources in CARE communities.

Policy HE-G.9: Healthy infill development. Promote measures and mitigations for infill development to protect residents from air and noise pollution, such as more stringent building performance standards, proper siting criteria, development and environmental review processes, and enhanced air filtration.

Policy HE-G.10: Conservation. Promote energy conservation and efficiency in homes, businesses, schools, and other infrastructure to reduce energy use and criteria pollutant and greenhouse gas emissions.

Policy C-HS 1: Ambient air quality for Santa Clara County should comply with standards set by state and federal law.

Policy C-HS 12: Measures to reduce particulate matter pollution originating from quarrying, road, and building construction, industrial processes, unpaved parking lots, and other 1sources should be encouraged.

Policy C-HS(i) 1: Reductions in vehicular exhaust emissions also contribute to reductions in levels of suspended particulate matter.

Policy C-HS(i) 2: Low-cost techniques such as washing the tires of construction vehicles to remove soil before they leave a site prevents soils from being deposited on roadways, where it may be “re-entrained” by other traffic and produce high levels of the particulates.

Sustainability Master Plan (2021)

Strategy 3.1: Air Quality and Pollution. Protect air quality and reduce the release of air-borne toxins/contaminants, focusing on reducing the exposure of historically marginalized communities to sources of environmental pollution. Target: Meet state and federal standards for 11 air pollutants.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Conservation and Natural Resources Element:

Strategy CNR-11.2d: Construction Dust Control: Require dust control measures, including those included in the Santa Clara Valley Non-point Pollution Control Program, during construction.

Conservation and Open Space Element:

Goal COS-10: Improve air quality in Campbell and the region through reductions in air pollutants and GHG emissions.

Policy COS-10.2: Align the city's local GHG reduction targets with the statewide GHG reduction targets of Assembly Bill 32 and align the city's GHG reduction goal with the statewide GHG reduction goal of Executive Order S-03-05.

Policy COS 10.3: Minimize exposure of sensitive receptors to concentrations of air pollutant emissions and toxic air contaminants. For discretionary projects involving sensitive receptors (i.e., children, the elderly, or people with illnesses) proposed within 500 feet of State Route 17 or State Route 85, require an analysis of mobile source toxic air contaminant health risks and, if necessary, incorporate appropriate mitigation measures to reduce health risks to the greatest extent feasible.

Policy COS 10.4: Require projects to adhere to the requirements of the Bay Area Air Quality Management District (BAAQMD), including standards related to fireplaces, wood stoves, heaters, dust control, and abatement measures.

Policy COS 10.6: Use the city's development review process and the California Environmental Quality Act (CEQA) to evaluate and mitigate the local and cumulative effects of new development on air quality.

Policy COS 10.7: Coordinate with the California Air Resources Board (CARB) and the Bay Area Air Quality Management District to properly measure air quality at emission sources and enforce the standards of the Clean Air Act.

Policy COS 10.8: Comply with regional, state, and federal standards and programs for control of all airborne pollutants and noxious odors, regardless of source.

Policy COS 10.9: Coordinate with Santa Clara County and nearby cities to implement regional GHG reduction plans and consolidate efforts to reduce GHGs throughout the county.

Policy COS-10a: Review all new industrial and commercial development projects for potential air quality impacts to residences and other sensitive receptors. The city shall ensure that mitigation measures and best management practices are implemented to reduce significant emissions of criteria pollutants. Adopt an ordinance codifying these requirements into the Campbell Municipal Code.

Policy COS-10.b: Review development, infrastructure, and planning projects for consistency with BAAQMD requirements during the application review and/or CEQA review process. Require project applicants to prepare air quality analyses to address BAAQMD and General Plan requirements, which includes analysis and identification of:

- Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions;
- Potential exposure of sensitive receptors to toxic air contaminants;
- Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions; and
- Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.

Policy COS-10.c: Prepare a Climate Action Plan that establishes GHG reduction targets that are consistent with Statewide GHG reduction goals and includes an implementation program to achieve the reduction targets. Periodically review and update the Plan as necessary to achieve the GHG reduction targets specified in the Plan.

Policy COS-10.f: Require adequate buffering or other mitigation of all potential air pollutant sources, including commercial and industrial emissions. COS-10.g Assist the BAAQMD and Santa Clara County in their efforts to achieve compliance with existing air quality regulations. COS-10.h Assess the adequacy of environmental documents for projects proposed in the city utilizing the thresholds established in the BAAQMD guidelines.

Conservation and Open Space Element:

Policy SA-5.2: Encourage residents and businesses to minimize the use of toxic materials and products including the application of pesticides, herbicides, and fertilizers.

Policy SA-5.3: Strive to reduce or eliminate private aerial spraying of pesticides throughout the city.

Community Health and Wellness Element:

Action CHW-8.a: Review all development proposals, planning projects, and infrastructure projects to ensure that potential adverse impacts to disadvantaged communities, such as exposure to pollutants, including toxic air contaminants, are not disproportionate, and are reduced to the greatest extent feasible.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Environmental Resources/Sustainability Element

Policy ES-4.1: New Development. Minimize the air quality impacts of new development projects and the impacts affecting new development.

Strategy ES-4.1.1: Toxic Air Contaminants. Continue to review projects for potential generation of toxic air contaminants at the time of approval and confer with Bay Area Air Quality Management District on controls needed if impacts are uncertain.

Strategy ES-4.1.2: Dust Control. Continue to require water application to non-polluting dust control measures during demolition and the duration of the construction period.

Strategy ES-4.1.3: Planning. Ensure that land use and transportation plans support air quality goals.

Policy ES-4.2: Existing Development. Minimize the air quality impacts of existing development.

Strategy ES-4.2.1: Public Education Program. Establish a citywide public education program providing information on ways to reduce and control emissions; and continue to provide information about alternative commutes, carpooling and restricting exacerbating activities on "Spare the Air" high-emissions days.

Strategy ES-4.2.5: Point Sources of Emissions. Continue to seek the cooperation of the BAAQMD to monitor emissions from identified point sources that impact the community. In addition, for sources not within the

regulatory jurisdiction of the City, seek cooperation from the applicable regulatory authority to encourage reduction of emissions.

Gilroy

City of Gilroy 2040 General Plan (2020)

Natural and Cultural Resources Element

Goal NCR 3: Contribute to improvements in regional air quality and reductions in greenhouse gas emissions.

Policy NCR 3.8: Community-Wide Alternative Fuel Vehicles Encourage community-wide use of alternative fuel vehicles through expansion of alternative vehicle refueling infrastructure.

Policy NCR 3.15: Reduce Construction Emissions Require the use of low emissions construction equipment for public and private projects, consistent with the air district 2017 Clean Air Plan. Where construction-related emissions would exceed the applicable Thresholds of Significance, the City will consider, on a case-by-case basis, implementing Additional Construction Mitigation Measures (Table 8-3 in BAAQMD's CEQA Guidelines).

Policy NCR 3.16: Implement Dust-Control Measures Require the implementation of the air district's dust control measures during construction of individual projects, consistent with the air district 2017 Clean Air Plan.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Natural Environment and Hazards Element

Goal 8: Maintain or improve air quality in Los Altos.

Policy 8.1: Support the principles of reducing air pollutants through land use, transportation, and energy use planning.

Policy 8.2: Encourage transportation modes that minimize contaminant emissions from motor vehicle use.

Policy 8.3: Interpret and implement the General Plan to be consistent with the regional Bay Area Air Quality Management Plan, as periodically updated.

Policy 8.4: Ensure location and design of development projects so as to conserve air quality and minimize direct and indirect emissions of air contaminants.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Conservation Element

Goal 4: Improve air quality.

Policy 4.1: Support regional, state, and federal programs that improve air quality in the Bay Area.

Program 4.1 Encourage the use of alternative modes of transportation by maintaining and developing the Town's pathways system for bicyclists, pedestrians, and equestrians.

Program 4.2 Require all new fireplace inserts to comply with EPA-approved standards.

Program 4.3 Monitor construction and grading activities to control dust.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Environment and Sustainability Element

Policy ENV-8: Improve the air quality in Los Gatos

Policy ENV 8.1: Air Quality Standards: Federal, State, and regional air quality goals, policies, standards, and requirements shall be addressed during environmental review for local land use and development decisions. Applicable standards or requirements, if not already in the proposed plans, shall be incorporated as conditions of approval.

Policy ENV 8.2: Support Regional Efforts to Reduce Air Pollution: Coordinate with and support the Air District, MTC, State, and Federal planning efforts and programs aimed at reducing air pollution, including ongoing monitoring and management of major pollutants affecting Los Gatos and the region, with a particular focus on PM2.5 and PM10 (Particulate Matter).

Policy ENV 8.3: Decrease Vehicle Miles Traveled (VMT): Require decreases to vehicle miles traveled (VMT) whenever the environmental review document concludes that the traffic generated by a development project would result in adverse impacts from air and noise pollution. Decreases in VMT could be achieved through transportation demand management (TDM) programs.

Policy ENV 8.4: Electric Vehicle Infrastructure: Require installation of electric vehicle charging stations as a ratio of total required parking for new and

redeveloped commercial, multi-family, residential subdivision, and condominium projects.

Policy ENV 8.5: Education Programs to Reduce Particulate Emissions from Vehicles: Support education programs that promote the reduction of particulate emissions from vehicles, such as reducing idling time, as well as reducing overall VMT.

Policy ENV 8.6: Metropolitan Transportation Commission Recommendations: Support MTC recommendations for the reduction of auto pollutants including encouraging the use of clean, alternative energy sources for transportation, wherever practical.

Policy ENV 8.7: Reduce Effects of High Air Pollutant Concentrations: Require developments to incorporate site planning techniques that reduce exposure of people to the impacts of high air pollutants from adjacent roadways.

Policy ENV 8.8: Reduce Emissions from Commercial Sources: Reduce particulate emissions from dry cleaning, light manufacturing, wood burning, and landscape maintenance.

Policy ENV 8.9: Air Pollution Impacts During Construction: Require project proponents to prepare and implement a construction management plan that incorporates Best Available Control Measures and all best management practices in accordance with the Air District standards to reduce criteria pollutants.

Milpitas

Milpitas 2040 General Plan (2021)

Conservation and Sustainability Element

Goal CON-7: Implement a proactive approach to maintain and improve air quality within Milpitas and the region.

Policy CON 7-1: Ensure that land use and transportation plans support air quality goals through a logical development pattern that focuses growth in and around existing urbanized areas, locates new housing near places of employment, encourages alternative modes of transportation, supports efficient parking strategies, reduces vehicle miles traveled, and requires projects to mitigate significant air quality impacts.

Policy CON 7-2: Minimize exposure of the public to toxic or harmful air emissions and odors through requiring an adequate buffer or setback distance between residential and other sensitive land uses and land uses that typically generate air pollutants, toxic air contaminants, or obnoxious fumes or odors, including but not limited to industrial, manufacturing, and processing facilities, high-volume roadways, and industrial rail

lines. New sensitive receptors, such as residences (including residential care and assisted living facilities for the elderly), childcare centers, schools, playgrounds, churches, and medical facilities shall be located away from existing point sources of air pollution such that excessive levels of exposure do not result in unacceptable health risks. Compliance shall be verified through the preparation of a Health Risk Assessment when deemed necessary by the Planning Director.

Policy CON 7-3: Require projects which generate high levels of air pollutants, such as heavy industrial, manufacturing facilities and hazardous waste handling operations, to incorporate air quality mitigations in their design to reduce impacts to the greatest extent feasible.

Policy CON 7-4: Require projects to adhere to the requirements of the Bay Area Air Quality Management District (BAAQMD).

Policy CON 7-5: Use the City's development review process and the California Environmental Quality Act (CEQA) to evaluate and mitigate the local and cumulative effects of new development on air quality.

Policy CON 7-6: Coordinate with the California Air Resources Board (CARB) and the Bay Area Air Quality Management District to properly measure air quality emission sources and enforce the standards of the Clean Air Act.

Policy CON 7-7: Comply with regional, state, and federal standards and programs for control of all airborne pollutants and noxious odors, regardless of source.

Policy CON 7-8: Consider the health risks associated with Toxic Air Contaminants (TACs) when reviewing development applications.

Policy CON 7-9: Coordinate with Santa Clara County and nearby cities to implement regional GHG reduction plans and to consolidate efforts to reduce GHGs throughout the county as appropriate.

Policy CON 7-10: Implement policies and action from the Land Use and Circulation Elements to provide mixed-use developments, locate high-density uses near transit facilities, provide neighborhood-serving retail uses convenient to residential neighborhoods, and other Transportation Demand Management (TDM) programs that would reduce vehicle trips and vehicle miles traveled, thus reducing air-pollutant emissions.

Policy CON 7-11: Encourage improvements and design features that reduce vehicle delay such as bus turnouts, and synchronized traffic signals for new development to reduce excessive vehicle emissions caused by idling.

Policy CON 7-12: Encourage and prioritize infrastructure investments and improvements that promote safe walking, bicycling and increased transit ridership.

Policy CON 7-13: Implement energy policies and actions that have cobenefits of reduced air pollution and greenhouse gases by increasing energy efficiency, conservation, and the use of renewable resources.

Monte Sereno

Monte Sereno General Plan (2008)

Health and Safety Element

Goal HS-4: Protect the community from man-made hazards such as air pollution, hazardous materials, and criminal activity.

Policy HS-4.1: Provide information to residents about household use and disposal of hazardous materials.

Policy HS-4.2: Prohibit the accumulation of weeds, dirt, rubbish, rank growths and other hazardous material in any building, lot or premises within the city.

Policy HS-4.3: Work with the Police Department to maintain a high level of visible police patrol services within the city.

Policy HS-4.4: Support the Police Department's efforts to use modern technology and provide adequate training to maximize job performance.

Policy HS-4.5: Encourage service and education programs which respond to community concerns such as elderly people living alone, drug and alcohol abuse, and crime.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Natural Resources and Environment Element

Goal NRE-10: Reduced air pollution emissions.

Policy NRE-10.1: Regional and Subregional Cooperation. Cooperate with regional agencies in developing and implementing air quality management plans. Support subregional coordination with other cities, counties, and agencies in the Santa Clara Valley and adjacent areas to address land use, planning issues as a means of improving air quality.

Policy NRE-10.2: State and Federal Regulation. Encourage effective regulation of mobile and stationary sources of air pollution and support State and federal regulations to improve automobile emission controls.

Policy NRE-10.3: Automobile Emissions. Encourage the use of and infrastructure for alternative fuel, hybrid, and electric vehicles. Encourage new and existing public and private development to include electric vehicle charging stations.

Policy NRE-10.4: Reduced Automobile Use. To reduce air pollution the frequency and length of automobile trips and the amount of traffic congestion by controlling sprawl, promoting infill development, and encouraging mixed uses and higher density development near transit. Support the expansion and improvement of alternative modes of transportation. Encourage development project designs that protect and improve air quality and minimize direct and indirect air pollutant emissions by including components that reduce vehicle trips.

Action NRE-10. A: Municipal Vehicle Fleet. Reduce air emission from municipal vehicles by increasing the City's alternative fuel vehicle fleet.

Action NRE-10. B: Public Employees. Develop programs to reduce vehicle use by City employees.

Action NRE-10.C: City Regulation. Review and evaluate ion the effectiveness of the City's site design measures, transit incentives, and new transportation technologies and encourage those that most successfully reduce air pollutant emissions.

Goal NRE-11: Minimized exposure of people to toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Policy NRE-11.1: TACs and Proposed Sensitive Uses. Require modeling for sensitive land uses, such as residential development, proposed near sources of pollution such as freeways and industrial uses. Require new residential development and projects categorized as sensitive receptors to incorporate effective mitigation measures into project designs or be located adequate distances from sources of toxic air contaminants (TACs) to avoid significant risk to health and safety.

Policy NRE-11.2: TACs and Existing Sensitive Uses. Encourage the installation of appropriate air filtration mechanisms at existing schools, residences, and other sensitive receptors adversely affected by existing or proposed pollution sources.

Policy NRE-11.3: Health Risk Assessments. For proposed development that emits toxic air contaminants, require project proponents to prepare health risk assessments in accordance with Bay Area Air Quality Management District procedures as part of environmental review and implement effective mitigation measures to reduce potential health risks to less-

than-significant levels. Alternatively, require these projects to be located an adequate distance from residences and other sensitive receptors to avoid health risks. Consult with the Bay Area Air Quality Management District to identify stationary and mobile toxic air contaminant sources and determine the need for and requirements of a health risk assessment for proposed developments.

Policy NRE-11.4: Truck Routes. For development projects generating significant heavy duty truck traffic, designate truck routes that minimize exposure of sensitive receptors to toxic air contaminants and particulate matter.

Policy NRE-11.5: Truck Idling. For development projects generating significant truck traffic, require signage to remind drivers that the State truck idling law limits truck idling to five (5) minutes.

Policy NRE-11.6: Vegetation Buffers. Encourage the use of pollution-absorbing trees and vegetation in buffer areas between substantial sources of toxic air contaminants and sensitive receptors.

GOAL NRE-12: Minimized air pollutant emissions from demolition and construction activities.

Policy NRE-12.1: Best Practices. Requirement that development projects implement best management practices to reduce air pollutant emissions associated with construction and operation of the project.

Policy NRE-12.2: Conditions of Approvals. Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At a minimum, conditions shall conform to construction mitigation measures recommended in the current Bay Area Air Quality Management District CEQA Guidelines.

Policy NRE-12.3: Control Measures. Require construction and demolition projects that have the potential to disturb asbestos (from soil or building material) to comply with all the requirements of the California Air Resource Board's air toxics control measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.

Policy NRE-12.4: Grading. Require subdivision designs and site planning to minimize grading and use landform grading in hillside areas.

Action NRE-12.A: Standard Measures for Demolition and Grading. Adopt and periodically update dust, particulate matter, and exhaust control standard measures for demolition, grading, and construction activities to include on project plans mitigation measures as conditions of approval based Bay Area Air Quality Management District CEQA Guidelines. Include measures to prevent silt loading on roadways that generates particulate matter air pollution by

prohibiting unpaved or unprotected access to public roadways from construction sites.

Action NRE-12. B: Grading Ordinance. Revise the grading ordinance and condition grading permits to require that graded areas be stabilized from the completion of grading to commencement and construction.

GOAL NRE-14: Minimum exposure of residents to objectionable odors.

Policy NRE-14.1: New Odor Sources. For new, expanded, or modified facilities that are potential sources of objectionable odors require an analysis of possible odor impacts and the provision of odor minimization and control measures as mitigation.

Policy NRE-14.2: Odors and Proposed Sensitive Uses. Require new residential development projects and projects categorized as sensitive receptors to be located an adequate distance from facilities that are existing or potential sources of odor. Determine the adequate separation distance based on the type, size, and operations of the facility.

City of Morgan Hill Zoning Code (§ 18.76.100)

Condition 18.76.100 of the City of Morgan Hill's Zoning Code (2018) prohibits objectionable odors that are perceptible by a reasonable person at the lot line of a site. However, odors from temporary construction, demolition, and vehicles that enter and leave the site (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard.

Mountain View

Mountain View 2030 General Plan (2012)

Mobility Element

Goal MOB-9: Achievement of state and regional air quality and greenhouse gas emission reduction targets.

Policy MOB 9.1: Greenhouse gas emissions. Develop cost-effective strategies for reducing greenhouse gas emissions in coordination with the Greenhouse Gas Reduction Program.

Policy MOB 9.2: Reduced vehicle miles traveled. Support development and transportation improvements that help reduce greenhouse gas emissions by reducing per capita vehicle miles traveled.

Policy MOB 9.3: Low-emission vehicles. Promote use of fuel-efficient, alternative fuel and low-emission vehicles.

Infrastructure and Conservation Element

Goal INC-20: Clean, breathable air and strongly controlled city sources of air pollution.

Policy INC 20.1: Pollution prevention. Discourage mobile and stationary sources of air pollution.

Policy INC 20.2: Collaboration. Participate in state and regional planning efforts to improve air quality.

Policy INC 20.3: Pollution-reduction technologies. Encourage the use of non-fossil fuels and other pollution-reduction technologies in transportation, machinery, and industrial processes.

Policy INC 20.4: Freight routes. Identify and maintain primary freight routes that provide direct access to industrial and commercial areas.

Policy INC 20.5: Truck access. Plan industrial and commercial development to avoid truck access through residential areas and minimize truck travel on streets designated primarily for residential access by the General Plan.

Policy INC 20.6: Air quality standards. Protect the public and construction workers from construction exhaust and particulate emissions.

Policy INC 20.7: Protect sensitive receptors. Protect the public from substantial pollutant concentrations.

Policy INC 20.8: Offensive odors. Protect residents from offensive odors.

Sustainability Action Plan 4 (2019)

T1: Develop comprehensive, multi-modal transportation plans and strategies to decarbonize the sector.

T7: Accelerate the electrification of vehicles.

T8: Reduce GHG emissions from City-owned fleet vehicles and equipment.

T9: Reduce GHG emissions associated with City employee commutes.

B1: Reduce GHG emissions from energy use in new buildings.

B2: Reduce GHG emissions from energy use in existing buildings.

B3: Decarbonize the energy supply.

B4: Decarbonize and improve the efficiency of City facilities.

L1: Develop land use strategies and policies that support VMT reduction.

W1. Reduce potable water use through efficiency and conservation measures.

W2: Increase the use of alternative water sources for non-potable uses.

S2: Improve GHG management and accounting.

Sustainability Action Plan 4 (2019)

P3. Reduce emissions from landscaping equipment.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Natural Environment Element

GOAL N-5: Clean, healthful air for Palo Alto and the San Francisco Bay Area.

Policy N-5.1: Support regional, State, and federal programs that improve air quality in the Bay Area because of its critical importance to a healthy Palo Alto.

Policy N-5.2: Support behavior changes to reduce emissions of particulates from automobiles.

Policy N-5.3: Reduce emissions of particulates from, manufacturing, dry cleaning, construction activity, grading, wood burning, landscape maintenance, including leaf blowers and other sources.

Policy N-5.4: All potential sources of odor and/or toxic air contaminants shall be adequately buffered, or mechanically or otherwise mitigated to avoid odor and toxic impacts that violate relevant human health standards.

Policy N-5.5: Support the BAAQMD in its efforts to achieve compliance with existing air quality regulations by continuing to require development applicants to comply with BAAQMD construction emissions control measures and health risk assessment requirements.

Policy N-5.6: Mitigate potential sources of toxic air contaminants through siting or other means to reduce human health risks and meet the BAAQMD's applicable threshold of significance. When siting new sensitive receptors such as schools, day care facilities, parks or playgrounds, medical facilities and residences within 1,000 feet of stationary sources of toxic air contaminants or roadways used by more than 10,000 vehicles per day, require projects to consider potential health risks and incorporate adequate precautions such as high-efficiency air filtration into project design.

San José

Envision San José 2040 General Plan (2011)

Natural Environment Element

Goal MS-10: Air Pollutant Emission Reduction: Minimize air pollutant emissions from new and existing development.

Policy MS-10.1: Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.

Policy MS-10.2: Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and State law.

Policy MS-10.3: Promote the expansion and improvement of public transportation services and facilities, where appropriate, to both encourage energy conservation and reduce air pollution.

Policy MS-10.4: Encourage effective regulation of mobile and stationary sources of air pollution, both inside and outside of San José. In particular, support Federal and State regulations to improve automobile emission controls.

Policy MS-10.5: In order to reduce vehicle miles traveled and traffic congestion, require new development within 2,000 feet of an existing or planned transit station to encourage the use of public transit and minimize the dependence on the automobile through the application of site design guidelines and transit incentives.

Policy MS-10.6: Encourage mixed land use development near transit lines and provide retail and other types of service-oriented uses within walking distance to minimize automobile dependent development.

Policy MS-10.7: Encourage regional and statewide air pollutant emission reduction through energy conservation to improve air quality.

Policy MS-10.8: Minimize vegetation removal required for fire prevention. Require alternatives to discing, such as mowing, to the extent feasible. Where vegetation removal is required for property maintenance purposes, encourage alternatives that limit the exposure of bare soil.

Policy MS-10.9: Foster educational programs about air pollution problems and solutions.

Action MS-10.14: Review and evaluate the effectiveness of site design measures, transit incentives, and new transportation technologies, and encourage those that most successfully reduce air pollutant emissions.

Goal MS-11: Toxic Air Contaminants: Minimize exposure of people to air pollution and toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Policy MS-11.1: Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

Policy MS-11.2: For projects that emit toxic air contaminants, require project proponents to repair health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.

Policy MS-11.3: Review projects generating significant heavy duty truck traffic to designate truck routes that minimize exposure of sensitive receptors to TACs and particulate matter.

Policy MS-11.4: Encourage the installation of appropriate air filtration at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.

Policy MS-11.5: Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Action MS-11.7: Consult with BAAQMD to identify stationary and mobile TAC sources 18 and determine the need for and requirements of a health risk assessment for proposed 19 developments. 20

Action MS-11.8: For new projects that generate truck traffic, require signage which 21 reminds drivers that the State truck idling law limits truck idling to five minutes.

Goal MS-12: Objectionable Odors: Minimize and avoid exposure of residents to objectionable odors.

Policy MS-12.1: For new, expanded, or modified facilities that are potential sources of objectionable odors (such as landfills, green waste and resource recovery facilities, wastewater treatment facilities, asphalt batch

plants, and food processors), the City requires an analysis of possible odor impacts and the provision of odor minimization and control measures as mitigation.

Policy MS-12.2: Require new residential development projects and projects categorized as sensitive receptors to be located an adequate distance from facilities that are existing and potential sources of odor. An adequate separation distance will be determined based upon the type, size and operations of the facility.

Goal MS-13: Construction Air Emissions: Minimize air pollutant emissions during demolition and construction activities.

Policy MS-13.1: Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.

Policy MS-13.2: Construction and/or demolition projects that have the potential to disturb asbestos (from soil or building material) shall comply with all the requirements of the California Air Resources Board's air toxics control measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.

Policy MS-13.3: Require subdivision designs and site planning to minimize grading and use landform grading in hillside areas.

Policy EC-4.6: Evaluate development proposed in areas with soils containing naturally occurring asbestos (i.e., serpentinite) that would require ground disturbance and/or development of new residential or other sensitive uses, for risks to people from airborne asbestos particles during construction and post-construction periods. Hazards shall be assessed, at minimum, using guidelines and regulations of the BAAQMD and the CARB

Policy EC-7.7: Determine for any development or redevelopment site that is within 1,000 feet of a known, suspected, or likely geographic ultramafic rock unit (as identified in maps developed by the Department of Conservation – Division of Mines and Geology) or any other known or suspected locations of serpentine or naturally occurring asbestos, if naturally occurring asbestos exists and, if so, comply with the BAAQMD's Asbestos ATCM requirements.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

Air Quality Policies

Policy 19: Protect the air quality of the City of Santa Clara and its sphere of influence. Promote land use and transportation policies which maintain air quality.

Environmental Quality Element

Goal 5.10.2-G1: Improved air quality in Santa Clara and the region.

Goal 5.10.2-G2: Reduced greenhouse gas emissions that meet the State and regional goals and requirements to combat climate change.

Policy 5.10.2-P1: Support alternative transportation modes and efficient parking mechanisms to improve air quality.

Policy 5.10.2-P2: Encourage development patterns that reduce vehicle miles traveled and air pollution.

Policy 5.10.2-P3: Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.

Policy 5.10.2-P4: Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.

Policy 5.10.2-P5: Promote regional air pollution prevention plans for local industry and businesses.

Policy 5.10.2-P6: Require "Best Management Practices" for construction dust abatement.

Saratoga

City of Saratoga 2040 General Plan (2024)

Land Use Element

Goal LU-15: Support regional efforts to improve air quality by reducing greenhouse gas emissions from both stationary and non-stationary sources

Policy LU-15.1: Require development projects to comply with Bay Area Air Quality Management District (BAAQMD) measures to reduce fugitive dust emissions due to grading and construction activities.

Policy LU-15.2: Encourage use of trip demand measures as part of major commercial and office development projects to reduce dependence on automobile use.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Environmental Management Element

Goal EM-11: Improved Air Quality. Improve Sunnyvale's air quality and reduce the exposure of its citizens to air pollutants.

Policy EM-11.1: Actively participate in regional air quality planning.

Policy EM-11.2: Utilize land use strategies to reduce air quality impacts, including opportunities for citizens to live and work in close proximity.

Policy EM-11.3: Require all new development to utilize site planning to protect citizens from unnecessary exposure to air pollutants.

Policy EM-11.4: (EJ) Require development projects that are located within 1,000 feet of a major pollution source and that include sensitive uses to implement all applicable best management practices that will reduce exposure to TACS and fine particulate matter (PM-2.5). Alternatively, require a site-specific health risk assessment (HRA).

Policy EM-11.5: Reduce vehicle miles traveled per capita or per employee, consistent with climate action playbook and land use and transportation council policy.

Policy EM-11.6: Reduce emissions from City of Sunnyvale fleet vehicles.

Policy EM-11.7: (EJ) Consider transportation improvements in areas of the city that are low-income and/or bear a high pollution burden (figure 7-10).

Policy EM-11.18: (EJ) Reduce odor conflicts by coordinating with BAAQMD to monitor odor complaints and require corrective action.

Policy EM-11.19: (EJ) Minimize exposure of sensitive uses to objectionable odors by reviewing new odor sources using BAAQMD guidelines and other environmental review processes and require appropriate corrective action.

Biological Resources

Santa Clara County

Santa Clara County General Plan (1994)

Resource Conservation Chapter

Habitat & Biodiversity

Strategy #1: Improve Current Knowledge and Awareness of Habitats and Natural Areas

C-RC 27: Habitat types and biodiversity within Santa Clara County and the region should be maintained and enhanced for their ecological, functional, aesthetic, educational, medicinal, and recreational importance.

Strategy #2: Protect the Biological Integrity of Critical Habitat Areas

C-RC 31: Areas of habitat richest in biodiversity and necessary for preserving threatened or endangered species should be formally designated to receive greatest priority for preservation, including baylands and riparian areas, serpentine areas, and other habitat types of major significance.

R-RC 31: Natural streams, riparian areas, and freshwater marshes shall be left in their natural state providing for percolation and water quality, fisheries, wildlife habitat, aesthetic relief, and educational or recreational uses that are environmentally compatible. Streams which may still provide spawning areas for anadromous fish species should be protected from pollution and development impacts which would degrade the quality of the stream environment.

R-RC 32: Riparian and freshwater habitats shall be protected through the following general means:

b. regulation of tree and vegetation removal;

c. reducing or eliminating use of herbicides, pesticides, and fertilizers by public agencies;

e. protection of endemic, native vegetation.

R-RC 35: Flood control modifications to be made in streams that have substantial existing natural areas should employ flood control designs which enhance riparian resources and avoid to the maximum extent possible significant alteration of the stream, its hydrology, and its environs.

R-RC 37: Lands near creeks, streams, and freshwater marshes shall be considered to be in a protected buffer area, consisting of the following:

1. 150 feet from the top bank on both sides where the creek or stream is predominantly in its natural state;

2. 100 feet from the top bank on both sides of the waterway where the creek or stream has had major alterations; and

3. In the case that neither (1) nor (2) are applicable, an area sufficient to protect the stream environment from adverse impacts of adjacent development, including impacts upon habitat, from sedimentation, biochemical, thermal and aesthetic impacts.

R-RC 38: Within the aforementioned buffer areas, the following restrictions and requirements shall apply to public projects, residential subdivisions, and other private non-residential development:

a. No building, structure or parking lots are allowed, exceptions being those minor structures required as part of flood control projects.

b. No despoiling or polluting actions shall be allowed, including grubbing, clearing, unrestricted grazing, tree cutting, grading, or debris or organic waste disposal, except for actions such as those necessary for fire suppression, maintenance of flood control channels, or removal of dead or diseased vegetation, so long as it will not adversely impact habitat value.

c. Endangered plant and animal species shall be protected within the area.

Strategy #3: Encourage Habitat Restoration Wherever Possible

C-RC 53: Restoration of habitats should be encouraged and utilized wherever feasible, especially in cases where habitat preservation and flood control, water quality, or other objectives can be successfully combined.

R-RC 54: Restoration of stream channels and riparian areas should be encouraged wherever feasible. Multiple uses, such as for recreational trails, should be considered so long as habitat and other ecological values are preserved.

General Plan Book B

General Plan: Book B, adopted on December 20, 1994, provides issues and policies for rural incorporated areas and urban unincorporated areas, as well as the South County Joint Area Plan, which includes policies for community development and environmental management in the southern portion of the county.

SC 15.8: Natural streamside and riparian areas should be left in their natural state, in order to preserve their value as percolation and recharge areas, natural habitat, scenic resources, recreation corridors and for bank stabilization. If flood control projects needed to protect presently existing development make this infeasible, disruption should be minimized, maintaining slow flow and stable banks through design and other appropriate mitigation measures.

SC 15.9: Wildlife, rare and endangered plants and animals, and heritage resources should be identified and protected from loss and destruction.

R-RC 90: Heritage and old growth trees, particularly redwoods, should not be cut, except in instances where public safety is jeopardized.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Conservation and Open Space Element:

Goal COS-7: Protect and maintain animal and plant species, city trees, waterways, and other supporting habitats within Campbell.

Policy COS-7.2: Preserve and enhance the aesthetic and habitat value of riparian corridors including the Los Gatos and San Tomas Aquino Creeks.

Policy COS-7.5: Work with Valley Water to preserve wetlands, riparian corridors, and buffer zones in Campbell by continuing to require that new development follow the "Guidelines and Standards for Land Use Near Streams" to protect streams and riparian habitats. Encourage the use of water quality wetlands, bioretention, watershed-scale retrofits, etc., where such measures are likely to be effective and technically and economically feasible.

Action COS-7a: Cooperate with State, federal, and local agencies to ensure that development does not cause significant adverse impacts to existing riparian corridors; this includes continued compliance with the "Guidelines and Standards for Land Use Near Streams" from Valley Water.

Action COS-7d: Work with Valley Water to restrict future fencing, piping, and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environmental and habitat of riparian corridors; in addition, evaluate opportunities to revert some existing concrete-lined channels to more natural alternatives such as levees.

Action COS-7e: Encourage the Santa Clara Valley Water District, County Parks Department, developers, and private property owners to plant and maintain native trees and plants and replace invasive, non-native species with native ones along creek corridors.

Action COS-7f: Continue to work collaboratively with Valley Water to institute on-going programs to remove invasive plant species and harmful insects from ecologically sensitive areas, primarily by means other than application of herbicides and pesticides.

Action COS-7h: Coordinate with the California Department of Fish and Wildlife, Santa Clara County, the Santa Clara Valley Water District, and local watershed protection groups to identify potentially impacted aquatic habitat within Campbell and to develop riparian management

guidelines to be implemented by development, recreation, and other projects adjacent to creeks, streams, and other waterways. Efforts should result in standards to reduce impacts between urban development and riparian corridors, including lighting restrictions, pollution controls, noise reduction, and other measures deemed appropriate to preserve and enhance the biological function of habitat.

Action COS-8o: Coordinate with and support the Santa Clara Valley Water District's groundwater recharge projects and pursue mutually beneficial agreements that identify and implement groundwater recharge projects within Campbell.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Land Use and Community Design Element:

Policy LU-6.7: Heritage Trees. Protect and maintain the city's heritage trees in a healthy state.

Strategy LU-6.7.1: Heritage Tree List. Establish and periodically revise a heritage tree list that includes trees of importance to the community.

Environmental Resources and Sustainability Element:

Policy ES 7-28: Natural Water Courses. Retain and restore creek beds, riparian corridors, watercourses and associated vegetation in their natural state to protect wildlife habitat and recreation potential and assist groundwater percolation. Encourage land acquisition or dedication of such areas.

Strategy ES-7.8.1: Inter-Agency Coordination. Work with the Santa Clara Valley Water District and other relevant regional agencies to enhance riparian corridors and provide adequate flood control by use of flow increase mitigation measures, such as hydromodification controls as established by the Municipal Regional Permit.

Gilroy

City of Gilroy 2040 General Plan (2020)

Natural and Cultural Resources Element:

Goal NCR 1: Preserve and enhance Gilroy's natural resources for current and future residents.

Policy NCR 1.2: Stream Protection. In concert with the Habitat Plan, protect the ecological, aesthetic and recreational value of the streams that flow through the Gilroy Planning Area. Areas required for riparian

setbacks shall be dedicated to Valley Water in fee or easement, or incorporated into private open space to be preserved and maintained by future development projects. Access to streams should be of sufficient width to accommodate trails, flood control access, and protection of riparian habitat.

Policy NCR 1.4: Plant and Wildlife Habitats. In concert with Habitat Plan requirements, preserve important plant and wildlife habitats, including streams and riparian habitats, wildlife movement corridors, heavily vegetated hillside areas, unique ecosystems (such as oak woodlands and serpentine substrates), and significant nesting/denning sites for native wildlife.

Policy NCR 1.7: Special Status Species. Special-status species are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW), or as Rare Plant Rank 1B or 2B species by the California Native Plant Society (CNPS). This designation also includes CDFW Species of Special Concern and Fully Protected Species. For special-status species that are not among the 18 covered species in the Habitat Plan, minimize future development in areas that support such species. Conduct focused surveys per applicable regulatory agency protocols as appropriate to determine if such species occur on a given project site, as determined necessary by a qualified biologist. If development of occupied habitat must occur, species impacts shall be avoided or minimized, and if required by a regulatory agency or the CEQA process, loss of wildlife habitat or individual plants should be fully compensated on the site. If off-site mitigation is necessary, it should occur within the Gilroy Planning Area whenever possible with a priority given to existing habitat mitigation banks. Habitat mitigation shall be accompanied by a long-term management plan and monitoring program prepared by a qualified biologist and include provisions for protection of mitigation lands in perpetuity through the establishment of easements and adequate funding for maintenance and monitoring.

Goal NCR 4: Maintain overall water quality by protecting surface and groundwater sources, restoring creeks and rivers to their natural state, and conserving water resources.

Policy NCR 4.7: Inter-Agency Coordination. Coordinate with agencies relevant to South County's water supply and water quality, including: the San Francisco Bay and Central Coast Regional Water Quality Control Boards; Valley Water; Santa Clara County; and Morgan Hill to protect regional water quality.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Open Space, Conservation and Community Facilities Element:

Goal 5: Protect and conserve water resources.

Policy 5.1: Keep or restore major drainage courses in their natural condition insofar as possible because of their importance in supplying major vegetation, land forms and wildlife habitat, and storm drainage.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Conservation Element

Goal 1: Conserve creeks and riparian areas as open space amenities and natural habitat areas.

Policy 1.1: Avoid fencing, piping, and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environment and habitat of the creek.

Policy 1.2: Work with the Santa Clara Valley Water District and other relevant regional agencies to enhance riparian corridors and provide adequate flood control by use of low impact restoration strategies.

Policy 1.3: Preserve the integrity of riparian corridors as unique and environmentally sensitive resources.

Goal 2: Protect native and naturalized trees and plants.

Policy 2.1: Minimize disturbance of the natural terrain and vegetation.

Policy 2.2: Preserve and protect native and naturalized plants, with special attention to preservation of unique, rare or endangered species and plant communities such as oak woodlands.

Policy 2.3: Preserve and protect Heritage Trees, including native oaks and other significant trees, on public and private property.

Policy 2.4: Encourage the planting of native trees and shrubs to provide a substantial buffer between the roadways and adjoining properties in harmony with the general character of the Town.

Policy 2.5: Encourage the removal and prevention of the spreading of aggressive exotics such as Italian thistle, stinkweed, pampas grass, acacia, yellow star thistle, French broom, Scotch broom and eucalyptus.

Policy 2.6: Encourage the removal of poison oak where allowed by law.

Policy 2.7: Avoid the development of environmentally sensitive areas that are rich in wildlife or of a fragile ecological nature, such as areas of rare or endangered species of plants, or riparian areas.

Goal 3: Maintain and enhance the integrity of wildlife habitat.

Policy 3.1: Maintain and protect creeks and riparian corridors for wildlife that use this resource for food, shelter, migration and breeding.

Goal 11: Promote and enhance the integrity of the natural environment.

Policy 11.6: Participate in and support the conservation efforts of other jurisdictions, agencies or organizations that are of mutual benefit to the Town.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Environmental and Sustainability Element:

Goal ENV-2: Maintain and enhance trees and significant natural features.

Policy ENV-2.1: Tree Protection. Ensure tree removal and replacement during development is consistent with the latest in tree conservation standards to support the Town's Arbor Day Foundation status as a Tree City USA.

Policy ENV-2.2: Landscaping in Public Spaces. The Town shall maintain existing trees and introduce new trees to enhance streetscapes, public spaces, and public parking lots to maximize the beneficial effects of tree canopies.

Policy ENV-2.3: Landscape Design. Continue to update landscape design guidelines for development consistent with Biological Resources goals and policies. Landscape design should promote the implementation of native species, drought tolerant species, and fire-wise plants and designs, including in hillside areas and future planning areas.

Goal ENV-6: Protect wetlands and riparian corridors, including intermittent and ephemeral streams.

Policy ENV-6.1: Prevent Damage from Development. Development shall not damage riparian areas, wetlands, and intermittent or ethereal streams.

Policy ENV-6.2: Retain Natural Conditions. Retain creek beds, riparian corridors, water courses, and associated vegetation in their natural state to assist groundwater percolation and prevent erosion, downstream sedimentation, and other degradation.

Policy ENV-6.3: Riparian Corridors. Require setbacks and measures as appropriate to protect riparian corridors.

Policy ENV-6.4: Planting Native Plants. Promote the planting of local native trees and shrubs where development occurs on land surrounding reservoirs and streams, especially adjacent to areas where banks or channels have been modified for flood protection.

Goal ENV-16: Protect and conserve watersheds and water quality.

Policy ENV-16.1: Avoid Water Contamination from New Development. Require all applicants to demonstrate that new development will not contaminate surface water and/or groundwater.

Policy ENV-16.2: Conserve Land Contiguous to Reservoirs and Stream Channels. Apply land use regulations, scenic easements, or other appropriate measures to keep the maximum amount of land immediately contiguous to reservoirs and stream channels undeveloped and undisturbed.

Policy ENV-16.3: Valley Water. Cooperate with Valley Water and other agencies to protect watersheds, groundwater, and riparian habitats from degradation.

Policy ENV-16.4: Conserve Existing Creeks. Conserve existing creeks and avoid disturbances, including fencing, lighting, structures, hydrological barriers, and roads, to these areas.

Policy ENV-16.5: Creek Dedication. Require that the approval of a development adjacent to a designated creek includes a condition that the creek be dedicated to the Town in fee with a maintenance easement granted to Valley Water.

Policy ENV-16.6: Alternative Paving Materials and Designs. Encourage alternative paving materials and designs to limit driveways, parking areas, and parking lots in all zones. Examples include, but are not limited to, pervious paving material, and “ribbon strip” driveways, which have pavement in tire areas and grass or gravel in the middle.

Policy ENV-16.7: Parking Lot Drainage. Implement bioswales and other innovations so runoff from parking lots drain into landscaped areas and rainwater percolates into the ground.

Policy ENV-16.8: Open Space and Recreation Prioritization. Require that open space and recreation is the priority land use designation for lands immediately adjacent to reservoirs, creeks, and streams.

Policy ENV-16.9: Stormwater Runoff. Reduce pollution in urban runoff from residential, commercial, industrial, municipal, and transportation land use activities.

Policy ENV-16.10: Street-Sweeping. Conduct regular street-sweeping to collect trash and road surface pollutants before they enter stormwater drainage systems.

Policy ENV-16.11: Sustainable Landscaping Practices Support low water landscaping practices and limited artificial fertilizer and pesticide application on public and private properties.

Milpitas

Milpitas 2040 General Plan (2021)

Conservation and Sustainability Element:

Goal CON-3: Protect and enhance native trees and vegetation throughout the city.

Policy CON 2-1: Conserve existing native trees and vegetation where possible and integrate regionally native trees and plant species into development and infrastructure projects where appropriate.

Policy CON 2-2: Require the use of primarily locally-sourced native and drought-tolerant plants and trees for landscaping on public projects, if feasible, and strongly encourage their use for landscaping on private projects.

Policy CON 2-3: Avoid removal of large, mature trees that provide wildlife habitat, visual screening, or contribute to the visual quality of the environment through appropriate project design and building siting. If full avoidance is not possible, prioritize planting of replacement trees on-site over off-site locations. Replacement trees for high-quality mature trees should generally be of like kind, and provide for comparable habitat functionality, where appropriate site conditions exist.

Policy CON 2-4: Proactively work to incorporate tree and plant species into the community that provide vibrant greenery, are drought tolerant, and enhance the visual quality of the city.

Policy CON 2-5: Facilitate the preservation of existing trees, the planting of additional street trees, and the replanting of trees lost through disease, new construction or by other means.

Policy CON 2-8: Strongly discourage the removal of healthy protected trees on public and private property. When tree removal is necessary in order to protect public safety or property, continue to require the replacement planting of trees.

Policy CON 2-9: Discourage the removal of Heritage Trees unless the tree poses a risk to public safety.

Policy CON 2-10: Utilize a variety of tools, including but not limited to, demonstration gardens, interpretive signage, lectures and historical resources to share information on the importance of preservation of native vegetation, habitats and resources.

Goal CON-3: Protect and maintain waterways and other sensitive habitat for plant and animal species throughout Milpitas and to protect the health of the San Francisco Bay.

Policy CON 3-1: Preserve and enhance biological communities that contribute to Milpitas' and the region's biodiversity including, but not limited to, wetlands, riparian areas, and aquatic habitat.

Policy CON 3-2: Preserve and enhance the aesthetic and habitat value of riparian corridors including, but not limited to Coyote, Berryessa and Penitencia Creeks.

Policy CON 3-3: Limit the disturbance of natural water bodies and drainage systems in Milpitas by conserving natural open space areas, protecting channels, and minimizing the impacts and pollutants from stormwater and urban runoff.

Policy CON 3-4: Focus conservation efforts on areas that contain suitable habitat for endangered, threatened, migratory, or special-status species and that can be managed with minimal interference with nearby urban land uses.

Policy CON 3-5: Work with the Santa Clara Valley Water District to preserve wetlands, riparian corridors, and buffer zones in Milpitas by continuing to require that new development follow the "Guidelines and Standards for Land Use Near Streams" to protect streams and riparian habitats. Encourage the use of Green Stormwater Infrastructure such as water quality wetlands, bioretention swales, watershed-scale retrofits, and other low-impact development techniques, etc., consistent with the City's Green Stormwater Infrastructure Plan and where such measures are likely to be effective and technically and economically feasible.

Policy CON 3-6: Work cooperatively with local, state, and federal agencies to comply with regulations, reduce pollutants in runoff, and protect and enhance water resources in the Santa Clara Basin through implementation of the Santa Clara Valley Urban Runoff Prevention Program.

Action CON-3c: Cooperate with State, federal and local agencies to ensure that development does not cause significant adverse impacts to existing riparian corridors; this includes continued compliance with the "Guidelines and Standards for Land Use Near Streams" from the Santa Clara Valley Water District and Title XI, Chapter 15 (Floodplain Management Regulations) of the Milpitas Municipal Code.

Action CON-3d: Continue to require new development and infrastructure projects to incorporate the standards and requirements contained in the Green Stormwater Infrastructure Handbook, Santa Clara Valley Urban Runoff Pollution Prevention Program C.3 Stormwater Handbook and comply with Title XI, Chapter 16 (Stormwater and Urban Runoff Pollution Control) of the Milpitas Municipal Code to ensure that Low Impact Development measures are incorporated into site designs to reduce pollutants from non-point sources, incorporate "green" stormwater infrastructure, and encourage greater use of permeable paving surfaces.

Action CON-3e: Continue to implement a comprehensive municipal stormwater pollution-prevention program in compliance with requirements of the Santa Clara Valley Urban Runoff Prevention Program and the Municipal Regional Stormwater Permit as issued by the San Francisco Bay Regional Water Quality Control Board.

Action CON-3f: Work with the Santa Clara Valley Water District to restrict future fencing, piping and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environmental and habitat of riparian corridors; in addition, evaluate opportunities to revert some existing concrete-lined channels to more natural alternatives such as levees.

Action CON-3g: Encourage the Santa Clara Valley Water District, County Parks Department, developers and private property owners to plant and maintain native trees and plants and replace invasive, non-native species with native ones along creek corridors.

Action CON-3h: Continue to work collaboratively with the Santa Clara Valley Water District to institute on-going programs to remove invasive plant species and harmful insects from sensitive habitat areas, primarily by means other than application of herbicides and pesticides.

Action CON-3i: Continue to collaborate with the Santa Clara Valley Water District, and pursue grant funding from the district to support the priorities and projects of the Safe, Clean Water and Natural Flood Protection Program.

Action CON-3j: Coordinate with the California Department of Fish and Wildlife, Santa Clara County, the Santa Clara Valley Water District, and local watershed protection groups to identify potentially impacted aquatic habitat within Milpitas and to develop riparian management guidelines to be implemented by development, recreation, and other projects adjacent to creeks, streams, and other waterways. Efforts should result in standards to reduce impacts between urban development and riparian corridors, including lighting restrictions, pollution controls, noise reduction, and other measures deemed appropriate to preserve and enhance the biological function of habitat.

Monte Sereno

Monte Sereno General Plan (2008)

Open Space and Conservation Element

Goal OSC-4: Preserve and protect valuable biological resources.

Policy OSC-4.1: Preserve and rehabilitate natural habitat areas that support wildlife, particularly large contiguous areas of open space and riparian habitat along creeks.

Policy OSC-4.2: Preserve and protect rare, endangered and other sensitive species.

Policy OSC-4.4: Require mitigation of potential impacts to special status plant and animal species based on a policy of no-net-loss of habitat value. Mitigation measures shall incorporate, as the City deems appropriate, the guidelines and recommendations of the US Fish and Wildlife Service and the California Department of Fish and Game.

Policy OSC-4.5: To the extent possible, encourage the retention and reestablishment of native vegetation in all private development projects and public facility construction projects.

Policy OSC-4.6: Use native plants for landscaping of all public projects to the extent possible.

Goal OSC-5: Preserve and enhance the city's urban tree canopy.

Policy OSC-5.1: Continue to require that development proposals minimize the disturbance to or removal of existing trees to the extent possible.

Policy OSC-5.2: Require that removed trees be replaced with at least a one-to-one ratio, unless prohibited by good forestry practices

Policy OSC-5.3: Encourage the replacement of non-native trees with California native tree species.

Policy OSC-5.4: Continue to preserve and protect California native trees while recognizing the need to allow for the gradual replacement of trees to provide for on-going natural renewal.

Policy OSC-5.5: Continue to enforce the Tree Removal Ordinance and require development proposals to provide adequate information to City staff to assess the project's impact on existing trees.

Policy OSC-5.6: Continue to preserve the quality of trees in public and private open space areas.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Natural Resources and Environment Element:

Goal NRE-5. Preservation and reclamation of streams and riparian areas as open space

Policy NRE-5.1: Encourage reclamation of degraded streams and riparian areas.

Policy NRE-5.2: Coordinate with jurisdictional agencies, as required, as part of the environmental review process for development projects.

Policy NRE-5.3: Retain natural streamside and riparian areas in their natural state in order to preserve their value as percolation and recharge areas, natural habitat, scenic resources, recreation corridors and to stabilize banks. (SCJAP 15.08)

Policy NRE-5.4: Consider development impacts upon wildlife in riparian areas and mitigate those environmental impacts.

Policy NRE-5.5: Where flood control projects are needed to protect existing development, minimize disruption of streams and riparian systems, maintaining slow flow and stable banks through design and other appropriate mitigation measures. (SCJAP 15.08)

Policy NRE-5.6: Protect existing stream channels and riparian vegetation by requiring buffering or landscaped setbacks and storm runoff interception as specified in Table NRE-1 and consistent with the Santa Clara Valley Habitat Plan.

Goal NRE-6. Protection of native plants, animals, and sensitive habitats.

Policy NRE-6.1: Preserve all fish and wildlife habitats in their natural state whenever possible. Consider development impacts upon wildlife and utilize actions to mitigate those environmental impacts.

Policy NRE-6.2: Support the implementation of the Santa Clara Valley Habitat Plan to protect wildlife, rare and endangered plants and animals, and sensitive habitats from loss and destruction.

Policy NRE-6.3: Minimize impacts upon wildlife when considering annexations, urban service area extensions, and other governmental actions that permit urban development of previously undeveloped property.

Policy NRE-6.4: Preserve and protect mature, healthy trees whenever feasible, particularly native trees and other trees which are of significant size or of significant aesthetic value to immediate vicinity or to the community as a whole.

Policy NRE-6.5: Require development to be designed to conserve soil and avoid erosion. (SCHAP 13.06)

Policy NRE-6.6: Encourage use of native plants, especially drought-resistant species, in landscaping.

Policy NRE-6.7: Encourage the protection, restoration, and enhancement of remaining native grasslands, oak woodlands, marshlands, and riparian habitat.

Action NRE-6.A: Standard Measures for Construction Activities. Develop a set of standard 6 measures requiring construction activities to avoid disturbance to natural features to the extent feasible.

Goal NRE-9: Cooperative efforts to ensure regional water quality.

Policy NRE-9.1: Maintain close coordination with the following agencies and organizations which share jurisdiction and interest relative to South County's water supply and water quality: the Regional Water Quality Control Boards, Santa Clara Valley Water District, Santa Clara County, City of Gilroy Planning Department, and San Martin Planning Committee. (SCJAP 10.02)

Mountain View

Mountain View 2030 General Plan (2012)

Land Use and Design Element:

Goal LUD-15: An area that is a model of highly sustainable and innovative development, protective of the natural and biological assets of the area.

Policy LUD 15.4: Wildlife friendly development. Implement wildlife friendly site planning, building and design strategies.

Infrastructure and Conservation Element:

Goal INC-16: Rich and biologically diverse ecological resources which are protected and enhanced.

Policy INC 16.1: Natural areas. Work with regional agencies to protect and enhance natural areas.

Policy INC 16.3: Habitat. Protect and enhance nesting, foraging and other habitat for special-status species and other wildlife.

Policy INC 16.5: Wetland habitat. Collaborate with and support regional efforts to restore and protect wetlands, creeks, tidal marshes and open-water habitats adjacent to San Francisco Bay.

Parks, Open Space and Community Facilities Element:

Goal POS-3: Open space areas with natural characteristics that are protected and sustained.

Policy POS 3.1: Preservation of natural areas. Preserve natural areas, creeks and Shoreline at Mountain View Regional Park primarily for low-intensity uses. In special circumstances more active uses may be permitted if the overall natural character of the larger area is retained.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Natural Environment Chapter

Goal N-1: Protect, conserve and enhance Palo Alto's citywide system of open space, including connected and accessible natural and urban habitats, ecosystems and natural resources, providing a source of public health, natural beauty and enjoyment for Palo Alto residents.

Policy N-1.5: Preserve and protect the Bay, marshlands, salt ponds, sloughs, creeks, and other natural water or wetland areas as open space, functioning habitats, and elements of a larger, interconnected wildlife corridor, consistent with the Baylands Master Plan, as periodically amended, which is incorporated here by reference.

Goal N-2: A thriving urban forest that provides public health, ecological, economic, and aesthetic benefits for Palo Alto.

Policy N-2.10: Preserve and protect Regulated Trees, such as native oaks and other significant trees, on public and private property, including landscape trees approved as part of a development review process and consider strategies for expanding tree protection in Palo Alto.

Goal N-3: Conservation of both natural areas and channelized creeks and riparian areas as open space amenities, natural habitat areas, and elements of community design.

Policy N-3.1: All creeks are valuable resources for natural habitats, connectivity, community design, and flood control, and need different conservation and enhancement strategies. Recognize the different characteristics along creeks in Palo Alto, including natural creek segments in the city's open space and rural areas, primarily west of Foothill Expressway; creek segments in developed areas that retain some natural characteristics; and creek segments that have been channelized. Pursue opportunities to enhance riparian setbacks along urban and rural creeks as properties are improved or redeveloped.

Policy N-3.2: Prevent the further channelization and degradation of Palo Alto's creeks.

Policy N-3.3: Protect the city's creeks from the impacts of future buildings, structures, impervious surfaces and ornamental landscaping and preserve their function as habitat connectivity corridors by establishing a range of setback requirements that account for existing creek conditions, land use characteristics, property ownership and flood control potential.

Policy N-3.4: Recognize that riparian corridors are valued environmental resources whose integrity provides vital habitat for fish, birds, plants and other wildlife, and carefully monitor and preserve these corridors.

Policy N-3.5: Preserve the ecological value of creek corridors by preserving native plants and replacing invasive, non-native plants with native plants.

Policy N-3.6: Discourage creek bank instability, erosion, downstream sedimentation, and flooding by minimizing site disturbance and vegetation removal on or near creeks and carefully reviewing grading and drainage plans for development near creeks and elsewhere in the watersheds of creeks.

Policy N-3.7: Avoid fencing, piping and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environment and habitat of the creek.

Policy N-3.8: Work with the SCVWD San Francisquito Creek Joint Powers Authority (JPA) and other relevant regional and non-governmental agencies to enhance riparian corridors, provide compatible low-impact recreation and ensure adequate flood control.

San José

Envision San José 2040 General Plan (Adopted 2011; Amended 2023)

Environmental Resources Element:

Goal ER-4: Special-Status Plants and Animals. Preserve, manage, and restore habitat suitable for special-status species, including threatened and endangered species.

Policy ER-4.1: Preserve and restore, to the greatest extent feasible, habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.

Goal ER-5: Protect migratory birds from injury or mortality.

Policy ER-6.6: Encourage the use of native plants in the landscaping of developed areas 18 adjacent to natural lands.

Goal ER-9: Water Resources. Protect water resources because they are vital to the ecological and economic health of the region and its residents.

Policy ER-9.1: In consultation with the Santa Clara Valley Water District, other public agencies and the SCVWDs Water Resources Protection Guidelines and Standards (2006 or as amended), restrict or carefully regulate public and private development in streamside areas so as to protect and preserve the health, function and stability of streams and stream corridors.

Policy ER-9.2: In consultation with the SCVWD restrict or carefully regulate public and private development in upland areas to prevent uncontrolled runoff that could impact the health and stability of streams.

Policy ER-9.3: Utilize water resources in a manner that does not deplete the supply of surface or groundwater or cause overdrafting of the underground water basin.

Policy ER-9.4: Work with the SCVWD to preserve water quality by establishing appropriate public access and recreational uses on land adjacent to rivers, creeks, wetlands, and other significant water courses.

Santa Clara

City of Santa Clara 2010 – 2035 (Adopted 2010;)

Conservation Goals

5.10.1-G1: The protection of fish, wildlife and their habitats, including rare and endangered species.

5.10.1-G2: Conservation and restoration of riparian vegetation and habitat.

Conservation Policies

5.10.1-P1: Require environmental review prior to approval of any development with the potential to degrade the habitat of any threatened or endangered species.

5.10.1-P2: Work with Santa Clara Valley Water District and require that new development follow the "Guidelines and Standards for Lands Near Streams" to protect streams and riparian habitats.

5.10.1-P3: Require preservation of all City-designated heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan.

5.10.1-P4: Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference measured from 48 inches above-grade on private and public property as well as in the public right-of-way.

5.10.1-P5: Encourage enhancement of land adjacent to creeks in order to foster the reinstatement of natural riparian corridors where possible.

Saratoga

City of Saratoga 2040 General Plan (2024)

Open Space and Conservation Element

Biological Resources:

Goal OSC 10: Protect and enhance sensitive vegetative and wildlife habitat in the Saratoga Planning area.

Policy OSC 10.1: Minimize development that would encroach into important wildlife habitats, limit or restrict normal range areas, or restrict access to water food or shelter. This includes limitations on the installation of barrier fencing in hillside areas.

Policy OSC 10.2: Through the development and CEQA process, preserve, protect, and maintain riparian habitats and creek corridors. This includes requiring biological surveys of parcels of land that could contain sensitive species or their habitats prior to allowing development on these parcels, including, but not limited to, essential habitat for special status animals and plants, oak woodlands, riparian woodland, vernal pools, and native grasslands. Ensure the preservation in place of habitat areas found to be occupied by State and federally protected species.

Policy OSC 10.4: Mature native vegetation shall be preserved wherever possible.

Arbor Resources:

Goal OSC 11: Increase overall tree cover, tree health, and consequent tree benefits in an equitable, cost beneficial, and sustainable manner.

Policy OSC 11.2: Development projects should include the preservation of protected trees and other significant trees. Any adverse effect on the health and longevity of native oak trees, protected or other significant trees should be avoided through appropriate design measures and construction practices. When tree preservation is not feasible, individual development projects shall include appropriate tree replacement as approved by the City.

Policy OSC 11.3: Trees used for new or replacement plantings should be selected primarily for low water use characteristics.

Policy OSC 11.5: Forested lands in the Sphere of Influence shall be managed to maximize environmental protection and to discourage logging to the maximum extent possible, consistent with proper fire protection standards and practices.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Land Use and Transportation Element

GOAL LT-2: Environmentally Sustainable Land Use and Transportation Planning and Development - Support the sustainable vision by incorporating sustainable features into land use and transportation decisions and practices.

Policy LT-2.6: Address sea level rise, increased rainfall, and other impacts of climate change when reviewing new development near creeks, and consider the projected flood levels over the economic lifespan of the project.

Open Space, Parks and Wetlands Element

Goal LT-10: Regional Approach to Providing and Preserving Open Space - the city embraces a regional approach to providing and preserving open space and providing open space and recreational services, facilities and amenities for the broader community.

Policy LT-10.5: Engage in regional efforts to enhance and protect land uses near streams and to respond to sea level rise and climate change.

Local Tree Ordinances

Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various localities within the Program area under either because the ordinance by its terms is not applicable to Valley Water (e.g., it does not apply to tree removal on public property) and/or because of Hall v. Taft (1956) 47 Cal. 2d 177, 189 (which holds that entities operating under mandates set forth by state law, including water districts, are exempt from municipal police power regulation). Tree ordinances/regulations for each jurisdiction are listed in Table 3.4-2 of Section 3.4, Biological Resources and summarized below.

Santa Clara County

Title C, Division C16: The ordinance states that it shall be unlawful to remove any protected tree on private or public property without having obtained a permit from the County in specific areas. A protected tree is classified as any tree with a trunk that is greater than 12 inches diameter at breast height (dbh; 4.5 feet about ground level or multi-trunk trees with a combined dbh greater than 24 inches for all trunks. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) removal of a diseased, dead, or dying tree; b) removal of a hazard tree; c) nursery trees; d) orchard trees; e) tree removal required under an approved building permit; f) utility work; g) Parks and Recreation maintenance activities; h) trees in County right-of-way; and i) removal of trees in accordance with the County vegetative maintenance program.

Campbell

Section 21.32: The ordinance states that it shall be unlawful to remove or severely trim any protected tree on private property without having obtained a permit from the City [of Campbell] in specific areas. A protected tree is classified as a tree designated by the historic

preservation Board as a heritage tree, any tree planted as a condition of approval for the acquisition of a permit, and trees planted on no residential properties with a dbh greater than 12 inches. Additionally, approved tree species on residential properties with trunks greater than 12 inches dbh are also classified as protected trees. The ordinance indicates that the removal of a protected tree requires the planting of a replacement in kind. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) emergencies; b) public nuisance; c) public utilities; d) fruit trees; e) eucalyptus trees; f) dead or dying trees; g) trees removed in association with approved accessory dwelling unit permits.

Section 11.08: The ordinances states that the department of public works is responsible for maintenance and removal of all trees within public areas and parkway strips. Additionally, the ordinances state that the department of public works my not unilaterally removal trees from public property without review by the parks and recreation commission, unless the tree is dead, diseased or potentially hazardous. The ordinance indicates that the removal of a street treat requires the replacement planting of an approved species of street tree.

Cupertino

Section14.18: The ordinance states that it shall be unlawful to irreversibly damage, kill, or remove any protected tree without having obtained a permit from the City in specific areas. A protected tree is classified as a tree designated by the Planning Commission as a heritage tree, mature trees on private property from the City [of Cupertino's] protected tree species list, approved development trees, and approved privacy protection trees planted in R-1 zoning districts. The ordinance indicates that the permitted removal of a protected tree requires the planting of a replacement's trees according to the replacement tree guidelines identified in Table 14.18.160A of the municipal code. Additionally, no permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) non-mature trees with trunk less than 12 inches dbh or multi-trunk less than 24 inches dbh; b) thinning and removing of trees in accordance with an approved tree management plant; c) public utility action.

Section 14.12: The ordinance states that the City [of Cupertino] and its residents share in the care and management of street trees located adjacent to private property. The ordinance also state that it shall be unlawful for any person other than the Tree/Right of Way Supervisor to plant, trim, move, or remove any public tree; permit activities detrimental to the health of public trees; intentionally poison or kill a public tree; deface, destroy, or set fire to a public tree; or permit vegetation growth on any public tree that may adversely affect the health of the tree. The ordinance requires that any permittee who would remove a public tree would be required to reimburse the City [of Cupertino] for expenses related to replanting replacement tree(s).

Gilroy

Chapter 26: The ordinance states that it shall be unlawful to cut, trim, plant, move, or removal any tree in any public property without having obtained a permit from the City. Additionally, the ordinance states that it is unlawful to trim, damage, or remove any tree on private property without the consent of the property owner.

Los Altos

Section 11.08: The ordinance states that it shall be unlawful to damage, kill, or remove any protected tree from public or private property without having obtained permit authorization. A protected tree is classified as any tree with a dbh of greater than 12 inches, any native species with a dbh greater than 10 inches, any tree designated by the historical commission as a heritage tree, and any tree planted or required to be saved under a development permit. The ordinance indicates that the permitted removal of a protected tree requires the 1:1 replacement with a tree of similar size canopy at maturity. Additionally, no permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) hazardous or dangers trees; b) City [of Los Altos] maintenance and removal activities for trees on public properties; and c) public utility action.

Section 9.20: The ordinance states that it shall be unlawful for any person to remove or injure any street tree, fasten any material to any street tree, or excavate and place pavement within 10 feet of any street tree without permit authorization.

Town of Los Altos Hills

Section 12-2: The ordinance states that it shall be unlawful to plant, remove or injure any street tree; fasten any material to any street tree; or excavate and place pavement within 10 feet of any street tree without permit authorization

Section 12-3: The ordinance states that it shall be unlawful to remove, damage, or injure a heritage oak identified by the Environmental Design and Protection Committee on public or private property without permit authorization. A removal permit is not required when the heritage oak is identified for removal on an approve development permit or the City Manager has identified that the heritage oak is an immediate hazard danger.

Section 12-4: The ordinance states that it shall be unlawful to remove, damage, or injure a heritage tree identified by the Environmental Design and Protection Committee without permit authorization.

Town of Los Gatos

Section 29.10: The ordinance states that it shall be unlawful to remove, trim greater than 25 percent, prune branches greater than four inches, conduct severe pruning, or authorize another entity to engage in tree removal or tree care actions with without having obtained permit authorization. A protected tree is classified as any which meets the standards identified in Section 29.10.0960 of the code, including any tree designated by the Town Council as a heritage tree, large protected trees, and trees plants as conditions of approval for development permits. The ordinance indicates that the permitted removal of a protected tree requires the tree replacements in according with Table 3-1 of the municipal code. Additionally, no permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) fruit trees; b) specific species of trees less than 24 inches dbh; and c) any removal required to maintain defensible space.

Section 26.20: The ordinance states that it shall be unlawful to damage or injure a street tree, attach material to a street tree, cause or permit unshielded wires to make contact to any street tree, allow harmful substance to contact street trees, or place pavement within four feet of any tree without having obtained permit authorization. The Department of Park and

Public Works is responsible for maintenance, removal, and replacement of trees in public places and parkways. Tree removal permits are administered by the Director of the Department of Park and Public Works, only when the requested removal meets one or more to the standards or review identified in Section 26.10.062.

Milpitas

Section X-2-4.02: The ordinance states that it shall be unlawful for any person other than City [of Milpitas] personnel in the to remove any street tree, protected tree or heritage planting without having obtained permit authorization. A protected tree is classified as any tree with a circumference of greater than 56 inches in residential zones, any trees with a circumference greater than 37 inches in non-residential zones, and any tree designated by the City Council as a heritage tree. The ordinance indicates that the permitted removal of a protected tree requires the 2:1 replacement with a commensurate sized tree.

Monte Sereno

Section 10.15.040: The ordinance states that it shall be unlawful for any person to remove or cause the removal of any significant tree, dead tree or unsuitable tree from any public or private property without having obtained permit authorization. A significant tree is classified as an oak or redwood tree with a circumference of greater than 20 inches in or any tree with a circumference greater than 25 inches. The ordinance indicates that the permitted removal of a significant tree requires the 2:1 replacement with native or drought-tolerant trees. Additionally, no permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) in cases of emergency as designated by the City Manger; b) safe operation of public utilities.

Morgan Hill

Section 12.32.030: The ordinance states that it shall be unlawful for any person to cut down, remove, poison, or kill any ordinance sized tree, street tree or community of trees from any public or private property without having obtained permit authorization. An ordinance sized tree is classified as tree with a circumference greater than 40 inches for nonindigenous trees and circumferences greater than 18 inches for native trees. Additionally, community of trees is classified as a group of trees of any size which are ecologically of aesthetically related. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) trees removal that conforms with approved development permits; b) commercial tree farms; c) non-indigenous trees within residential zones that do not qualify as street trees.

Mountain View

Section 32.20: The ordinance states that it shall be unlawful for any person to damage, destroy, or mutilate any street tree or shrub without having obtained permit authorization. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) dead, diseased, or dying trees on public or private property; b) trees or shrubs which are determined to create a hazardous condition; c) any tree or shrub on private property identified as destroying, damaging, or impairing public infrastructure; d) vines or plants growing into street trees; e) infects or infested trees on public or private property; f) thorny plants that impede walkways or streets; g) shrubs more than 12 inches in height within parkway strips.

Section 32.27: The ordinance states that it shall be unlawful for any person to cut down, destroy, remove, or relocate any heritage tree on public or private property without having obtained permit authorization. A heritage tree is classified as tree with a circumference greater than 48 inches; a multi-trunk tree with a combined circumferences greater than 48 inches; any oak, redwood, or cedar tree with a circumference greater than 12 inches, or a tree or grove identified as a heritage tree by the City Council. The ordinance indicates that the permitted removal of a significant tree requires a replacement according to permit conditions of approval. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: 1) damaged and hazardous trees; 2) necessary for firefighting; 3) City employee operations; 4) public utilities; 5) landfill maintenance; 6) dead trees.

Palo Alto

Section 8.04.070: The ordinance states that it shall be unlawful for any person to trim, damage, destroy, or mutilate a public tree, shrub, hedge, or plant without having obtained permit authorization. Additionally, it is unlawful to fasten materials to trees, shrubs hedges, or plants, or excavate within 10 feet of a public tree. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) dead, diseased, or dying trees on public or private property; b) any tree, shrub, hedge or plant on private or public property identified as destroying, damaging, or impairing public infrastructure; c) trees blocking sight lines at intersections; d) vines or plants growing into street trees; e) infects or infested trees on public or private property; f) shrubs or plants that obstruct vehicle or pedestrian travel; g) thorny plants that impede walkways or streets; h) shrubs more than 2 feet in height within parkway strips; i) any tree, shrub, hedge, or plant declared a public nuisance.

Section 8.10.050: The ordinance states that it shall be unlawful for any person to remove a protected tree without having obtained permit authorization. A protected tree is classified as any local tree species identified by the City which is greater than 11.5 inches dbh, any redwood that is greater than 18 inches dbh, any other tree which is greatr than 15 inches dbh, any tree designated for protected under a development permit, any tree designated for carbon sequestration or storage, any heritage tree designated by the city council, and any replacement or mitigation tree. The ordinance indicates that the permitted removal of a protected tree requires a replacement in accordance with the standards and specification of the Tree and Landscape Technical Manual. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) dead, hazardous or public nuisance trees; b) trees detrimental to or crowding adjacent protected trees; c) risk of retrenchment or other tree decline; d) impacting foundation or eaves of residence.

San José

Section 13.32.030: The ordinance states that it shall be unlawful for any person to remove a live tree from private property without having obtained permit authorization. Permit authorization is provided given the removal meeting the following conditions: A) removal is required per the provisions provided under Section 13.28; B) An approved development permit allows the tree removal; C) An amendment to a development permit allows the tree removal; D) a tree removal permit is issued.

Section 13.32.040: The ordinance states that it shall be unlawful for any person to remove a dead tree from private property without having obtained permit authorization. Permit authorization is provided given the removal meeting the following conditions: A) a certified arborist report has been provided; B) A development permit or a tree removal permit is issued.

Section 13.32.041: The ordinance states that it shall be unlawful for any person to remove an unsuitable tree from private property without having obtained permit authorization. A protected tree is classified as a live or dead tree that is not a heritage tree or a palm tree in the Palm Haven Conservation Area, that meets the requirements identified in Section 13.32.030.

Section 13.28.310: The ordinance states that it shall be unlawful for any person to prune, damage, or removal a street tree without having obtained permit authorization. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: 1) immediate hazardous condition where pruning is necessary; 2) immediate hazardous condition where removal is necessary; 3) removal is required pursuant to Chapter 13.28 of the municipal code; 4) removal for city-approved public works project; 5) removal for a City redevelopment agency project; 6) an approved development permit allows for the removal.

Santa Clara

Section 12.35.020: The ordinance states that it shall be unlawful to plant, damage or remove a street trees, heritage trees, protected trees, or approved development trees without having obtained permit authorization. A protected tree is classified as any native tree species with greater than a 12 inch dbh, any tree with greater than a 38 in dbh, and any multi-trunk tree with greater than a 38 inch combined dbh. Tree removal permits are administered by the City Manager, only when the requested removal meets applicable removal criteria.

Saratoga

Section 15-50.050 The ordinance states that it shall be unlawful for any person to remove, damage, prune or encroach upon protected trees located on private or public properties without having obtained permit authorization. A protected tree is classified as any native tree having a dbh greater than 6 inches, any other tree having a dbh greater than 10 inches, any street tree, any heritage tree designated by the City Council, any tree retained or planted as a condition of approval, any tree planted as a replacement. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) emergencies; b) public utilities; c) project approval.

Sunnyvale

Section 19.94.050: The ordinance states that it shall be unlawful for any person to remove protected trees or heritage landmark tree located on private or public properties without having obtained permit authorization. A protected tree is classified a tree greater than 38 inches in circumference or greater than cumulative 113 inches for multi-trunk trees. A heritage landmark tree is a local heritage resource as identified by the city council. The ordinance indicates that the permitted removal of a protected tree requires the a replacement in accordance with the Community Development Director discretion. No permit shall be required for orchard tree removal according to exceptions outlined under the ordinance.

Section 13.16.060: The ordinance states that it shall be unlawful for any person to plant, remove, or encroach upon any street tree without having obtained permit authorization. No permit shall be required for tree removal according to the exceptions outlined under the ordinance, including: a) dead, diseased, or dying trees on public or private property; b) any tree or shrub on private property identified as destroying, damaging, or impairing public infrastructure; c) vines or plants growing into street trees; d) infected or infested trees on public or private property; e) trees or shrubs that interfere with visibility requirements along roads or pathways; f) thorny plants that impede walkways or streets; g) shrubs more than 24 inches in height within tree easement; h) trees, shrub, or plants that obstruct vision triangles.

Cultural and Tribal Cultural Resources

Santa Clara County

Santa Clara County General Plan Book A (1994)

Cultural Resources

Definition of Heritage Resources: Heritage resources are those particular types of resources, both natural and man-made, which due to their vulnerability or irreplaceable nature deserve special protection if they are to be preserved for current and future generations.

The types of resources addressed as heritage resources include:

- historical sites, structures, and areas;
- archeological and paleontological sites and artifacts; and
- historical and specimen trees.

Policies

C-RC 49: Cultural heritage resources within Santa Clara County should be preserved, restored wherever possible, and commemorated as appropriate for their scientific, cultural, historic and place values.

C-RC 50: Countywide, the general approach to heritage resource protection should include the following strategies:

1. Inventory and evaluate heritage resources.
2. Prevent or minimize adverse impacts on heritage resources.
3. Restore, enhance, and commemorate resources as appropriate.

C-RC 52: Prevention of unnecessary losses to heritage resources should be ensured as much as possible through adequate ordinances, regulations, and standard review procedures. Mitigation efforts, such

as relocation of the resource, should be employed where feasible when projects will have significant adverse impact upon heritage resources.

General Plan Book B (Rural Unincorporated Area Policies)

Cultural Resources

Policy R-RC 1: Natural and heritage resources shall be protected and conserved for their ecological, functional, economic, aesthetic, and recreational values.

Policy R-RC 2.: Heritage resources shall be preserved to the maximum extent possible for their scientific, cultural, and "sense of place" values.

Policy R-RC 81: Heritage resources within the rural unincorporated areas of Santa Clara County shall be preserved, restored wherever possible, and commemorated as appropriate for their scientific, cultural, historic and place values.

Policy R-RC 82L The following strategies should provide overall direction to efforts to preserve heritage resources:

1. Inventory and evaluate heritage resources.

2. Prevent, or minimize, adverse impacts on heritage resources.

3. Restore, enhance, and commemorate resources as appropriate.

Policy R-RC 85: No heritage resource shall knowingly be allowed to be destroyed or lost through a discretionary action (zoning, subdivision site approval, grading permit, building permit, etc.) of the County of Santa Clara unless:

a. the site or resource has been reviewed by experts and the County Historic Heritage Commission and has been found to be of insignificant value; or

b. there is an overriding public benefit from the project and compensating mitigation to offset the loss is made part of the project.

Policy R-RC 86: Projects in areas found to have heritage resources shall be conditioned and designed to avoid loss or degradation of the resources. Where conflict with the resource is unavoidable, mitigation measures that offset the impact may be imposed.

Policy R-RC 90: Heritage and old growth trees, particularly redwoods, should not be cut, except in instances where public safety is jeopardized.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Conservation and Open Space Element:

Historic Resources

Goal COS-5: Protect and enhance historic resources—including places, buildings, or landmarks with historic, architectural, cultural, and/or aesthetic significance—in order to preserve the city's heritage for future generations.

Policy COS-5.1 Protect significant historic resources and use these resources to promote a sense of place and history in Campbell through implementation of the Historic Preservation Ordinance, Historic Design Guidelines for Residential Buildings, the conservation, and preservation of the city's historical collection at the Campbell Museum, and other applicable codes, regulations, and area plans.

Policy COS-5.2 Evaluate the condition of historical buildings, the costs of rehabilitation, and the feasibility of preservation or conservation alternatives when considering the demolition or movement of historic structures; when possible, encourage the adaptive re-use of the historic structure.

Policy COS-5.3 Use the preservation standards outlined in the city's Historic Design Guidelines for Residential Buildings and the current Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings, for properties listed, or eligible for listing, on the city's Historic Resource Inventory.

Cultural Resources

Goal COS-6: Preserve and protect prehistoric, historic, archaeological, and paleontological resources in Campbell.

Policy COS-6.1 Review proposed developments and work in conjunction with the California Historical Resources Information System, Northwest Information Center at Sonoma State University, to determine whether project areas contain known archaeological resources, either prehistoric and/or historic-era, or have the potential for such resources.

Policy COS-6.2 If found during construction, ensure that human remains are treated with sensitivity and dignity, and ensure compliance with the provisions of California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98.

Policy COS-6.3 Work with Native American representatives to identify and appropriately address, through avoidance or mitigation, impacts to

Native American cultural resources and sacred sites during the development review process.

Policy COS-6.4 Consistent with State, local, and tribal intergovernmental consultation requirements such as SB 18 and AB 52, the city shall consult as necessary with Native American tribes that may be interested in proposed new development and land use policy changes.

Action COS-6.1: Require all development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

- If construction or grading activities result in the discovery or significant historic or prehistoric archaeological artifacts or unique paleontological resources, all work within 100 feet of the discovery shall cease, the Planning Division shall be notified, the resources shall be examined by a qualified archaeologist, paleontologist, or historian for appropriate protection and preservation measures; and work may only resume when appropriate protections are in place and have been approved by the Planning Division.

- If human remains are discovered during any ground disturbing activity, work shall stop until the Planning Division and the County Coroner have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendants have been consulted; and work may only resume when appropriate measures have been taken and approved by the Planning Division. Adopt an ordinance codifying these requirements into the Campbell Municipal Code.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Land Use Element

Goal LU-6: Preserve and protect the city's historic and cultural resources.

Policy LU-6.1: Historic Preservation. Maintain and update an inventory of historically significant structures and sites in order to protect resources and promote resources and promote awareness of the city's history in the following categories: Historic Sites, Commemorative Sites, Community Landmarks and Historic Mention Sites.

Policy LU-6.2: Historic Sites. Projects on Historic Sites shall meet the Secretary of Interior Standards for Treatment of Historic Properties.

Policy LU-6.3: Historic Sites, Commemorative Sites and Community Landmarks. Projects on Historic Sites, Commemorative Sites and Community Landmarks shall provide a plaque, reader board and/ or other educational tools on the site to explain the historic significance of the resource. The plaque shall include the city seal, name of resource, date it was built, a written description and photograph. The plaque shall be placed in a location where the public can view the information.

Policy LU-6.4: Public Access. Coordinate with property owners of public and quasi - public sites to allow public access of Historic and Commemorative Sites to foster public awareness and education. Private property owners will be highly encouraged, but not required, to provide public access to Historic and Commemorative Sites.

Policy LU-6.5: Historic Mention Sites. These are sites outside the City' s jurisdiction that have contributed to the City' s history. Work with agencies that have jurisdiction over the historical resource to encourage adaptive reuse and rehabilitation and provide public access and plaques to foster public awareness and education.

Policy LU-6.6: Incentives for Preservation of Historic Resources. Utilize a variety of techniques to serve as incentives to foster the preservation and rehabilitation of Historic Resources including:

- Allow flexible interpretation of zoning ordinance not essential to public health and safety. This could include land use, parking requirements and/or setback requirements.
- Use the California Historical Building Codes standards for rehabilitation of historic structures.
- Tax rebates (Milles Act or Local tax rebates).
- Financial incentives such as grants/loans to assist rehabilitation efforts.

Policy LU-6.7: Heritage Tree List. Protect and maintain the city’s heritage trees in a healthy state.

Strategy LU-6.7.1: Heritage Tree List. Establish and periodically revise a heritage tree list that includes trees of importance to the community.

Policy LU-6.8: Cultural Resources. Promote education related to the city’s history through public art in public and private developments.

Gilroy

City of Gilroy 2040 General Plan (2020)

Historic and Cultural Resources

Goal NCR 5: Preserve significant historic buildings, sites, and resources to enrich the sense of place and appreciation of the city's history.

Policy NCR 5.1: Historic Structures and CEQA. Discretionary projects subject to the California Environmental Quality Act (CEQA), which include changes to, or demolition of, structures that are 45 years or older, will require an historic property report or other substantial evidence in the record of the project to determine whether the structure is historically significant.

Policy NCR 5.2: Historic and Pre-historic Archaeological Resources and CEQA. Discretionary projects subject to the California Environmental Quality Act (CEQA) which include disturbance of the existing ground surface of the project site will require an archaeological survey and records search if the project site is located in a moderate to high archaeological sensitivity zone as identified on Figure 3.5-1 of the General Plan EIR, or if other evidence suggests the project site to be archaeologically sensitive.

Policy NCR 5.3: Archeological Resources Protection. Ensure that all projects involving ground-disturbing activities include procedures to protect archaeological resources if discovered during excavation. Projects shall follow CEQA and other applicable State laws.

Policy NCR 5.4: Encourage public and private efforts for the preservation of historic and architecturally significant buildings and sites, archeological sites, and other landmarks.

Policy NRC 5.5: Maintain and periodically update the city's inventory of historically significant buildings to meet current State and Federal historic preservation guidelines.

Policy NCR 5.6: Strive to obtain State and Federal funding for the preservation of buildings and sites of historical merit and consider public/private partnerships for capital and program improvements including historic preservation components.

Policy NCR 5.7: Support the use of Mills Act contracts to reduce property taxes on historic properties and thereby provide a monetary incentive for their acquisition, maintenance, and restoration.

Policy NCR 5.8: Encourage preservation of older homes, other structures, and neighborhood districts with distinct and recognizable historic or architectural characteristics to maintain and enhance the historic

character of the city. In particular, encourage the retention and rehabilitation of older homes in and near the historic city center and ensure that rehabilitation activities are sensitive to the historic character of the building, site, and/or surrounding area.

Policy NCR 5.9: Promote adaptive reuse of old buildings, especially in the Downtown Historic District, to preserve the buildings' historic character while encouraging development of an economically vital Downtown.

Policy NCR 5.10: Consistent with Goal NCR 5, prior to approving the demolition of historically significant buildings, evaluate alternatives including structural preservation, relocation or other mitigation in an Environmental Impact Report (EIR), and demonstrate that financing has been secured for replacement use.

Policy NCR 5.11: Consider, on a case-by-case basis, allowing non-conforming uses in designated historic structures with a conditional use permit where the proposed use will not have a detrimental effect on the neighborhood and will be in keeping with the historic nature of the building, taking into consideration compatibility of the use to neighboring uses.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Cultural Resources Element

Goal 6: Preserve and enhance selected historic and cultural structures and resources within the community.

Policy 6.4: Preserve archaeological artifacts and sites found in Los Altos or mitigate disturbances to them, consistent with their intrinsic value.

Policy 6.5: Require an archaeological survey prior to the approval of significant development projects near creeksides or identified archaeological sites.

Implementation Strategies

CDHR 13: Protect Significant Archaeological Resources. Assess development proposals for potential impacts to significant archaeological resources pursuant to Section 15064.5 of the CEQA Guidelines. Require a study conducted by a professional archaeologist for projects located near creeks or identified archaeological sites to determine if significant archaeological resources are potentially present and if the project will significantly impact the resources. If significant impacts are identified, either require the project to be modified to avoid the impacts, or require measures to mitigate the

impacts. Mitigation may involve archeological investigation or recovery.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Conservation Element

Goal 10: Encourage both public and private efforts to preserve and enhance historic resources.

Policy 10.1: Preserve, protect and enhance the historic resources of the planning area because they are unique and valuable assets for the community and region.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Environment and Sustainability Element, Cultural and Historical Resources

Goal ENV-12: Protect Los Gatos's archaeological and cultural resources to maintain and enhance a unique sense of place.

Policy ENV-12.1: Evaluate Archaeological and Cultural Resources. Evaluate archaeological and/or cultural resources early in the development review process through consultation with interested parties and the use of contemporary professional techniques in archaeology, ethnography and architectural history.

Policy ENV-12.2: Protect Archaeological Resources. Protect archaeological resources, including natural land formations, sacred sites, historic habits, and remains of settlements in place before Los Gatos was founded.

Policy ENV-12.3: Archaeological and Culturally Significant Structures. Ensure the preservation, restoration and appropriate use of archaeological and/or culturally significant structures and sites.

Policy ENV-12.4: Human Remains. Treat with respect and dignity any human remains discovered during implementation of public and private projects within the Town.

Policy ENV-12.5: Uncovered Cultural Resources. Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

Policy ENV-12.6: Burial Sites. Encourage development to avoid impacts to burial sites by designing or clustering development to avoid archaeological deposits that may contain human remains.

Goal ENV-13: Preserve and protect Los Gato's historic buildings, sites, and resources.

Policy ENV-13.1: Historic Resource Preservation. Preserve non-municipal resources with historic merit, including residences and sites listed or eligible for listing in the State or Federal registers.

Policy ENV-13.2: Municipal Historic Resources. Preserve significant historic resources owned by the Town of Los Gatos while allowing them to be altered to meet contemporary needs consistent with the Secretary of the Interior Standards for Rehabilitation.

Policy ENV-13.3: Funding. Seek State and Federal funding for preservation of buildings of historical merit, both listed and potentially eligible for listing. Consider partnerships between public and private entities for capital and program improvements. Encourage owners of potential historic resources to adapt and rehabilitate these buildings through participation in State and Federal tax credit programs.

Policy ENV-13.4: Historic Commercial District. Reinforce the scale and character of the Los Gatos Historic Commercial District by promoting significant buildings, including regulating signage to be in keeping with the historic style and aesthetic of the district.

Policy ENV-13.5: Proposed Alterations. If a proposed project would substantially affect sites or structures of special character, or potential historical, architectural, or aesthetic interest that has not been evaluated for inclusion in the State or Federal registers, part of the plan review shall include consideration of eligibility prior to issuance of demolition or alterations permits. Minor exterior improvements that do not affect the architectural integrity of potentially significant buildings (as determined by the Historic Preservation Committee) shall be exempt from more extensive review. Examples of minor improvements may include repair or replacement in-kind that do not alter character-defining features.

Policy ENV-13.6: Adaptive Reuse. Promote adaptive reuse of older buildings and allow compatible non-conforming uses for the life of historic buildings.

Policy ENV-13.7: History Archives. Continue to support library, museum, private, and non-profit efforts to maintain historic resource collections, including collaborative efforts to acquire funding, educate the community, and provide access for researchers.

Policy ENV-13.8: Increase Historical and Cultural Awareness. Support a community sense of stewardship for historic and cultural resources through supporting talks, tours, and other programs that increase awareness

and promote Los Gatos as a destination with historic cultural resources and through including Indigenous People in the conversation and planning.

Milpitas

Milpitas 2040 General Plan (2021)

Conservation and Sustainability Element

Goal CON-4: Preserve and protect prehistoric, historic, archaeological, and paleontological resources in Milpitas.

Policy CON 4-1: Review proposed developments and work in conjunction with the California Historical Resources Information System, Northwest Information Center at Sonoma State University, to determine whether project areas contain known archaeological resources, either prehistoric and/or historic-era, or have the potential for such resources.

Policy CON 4-2: If found during construction, ensure that human remains are treated with sensitivity and dignity, and ensure compliance with the provisions of California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98.

Policy CON 4-3: Work with Native American representatives to identify and appropriately address, through avoidance or mitigation, impacts to Native American cultural resources and sacred sites during the development review process.

Policy CON 4-4: Consistent with State, local, and tribal intergovernmental consultation requirements such as SB 18 and AB 52, the City shall consult as necessary with Native American tribes that may be interested in proposed new development and land use policy changes.

Action CON-4a: Require a cultural and archaeological survey prior to approval of any project which would require excavation in an area that is sensitive for cultural or archaeological resources. If significant cultural or archaeological resources, including historic and prehistoric resources, are identified, appropriate measures shall be implemented, such as documentation and conservation, to reduce adverse impacts to the resource.

Action CON-4b: Require all development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains.

Goal CON-5: Preserve and enhance historic resources- including places, buildings, or landmarks with historic, architectural, cultural, and/or aesthetic significance.

Policy CON 5-1: Protect significant historic resources and use these resources to promote a sense of place and history in Milpitas through implementation of the Milpitas Cultural Resources Preservation Program (Municipal Code, Title XI, Chapter 4), the Conceptual Historic Resources Master Plan, the conservation and preservation of the City's historical collection at the Milpitas Community Museum, and other applicable codes, regulations, and area plans.

Policy CON 5-2: Evaluate the condition of historical buildings, the costs of rehabilitation, and the feasibility of preservation or conservation alternatives when considering the demolition or movement of historic structures; when possible, encourage the adaptive re-use of the historic structure.

Policy CON 5-3: Provide readily available public information on the Mills Act and encourage people to renovate historic homes in disrepair using property tax savings available through the Mills Act.

Monte Sereno

Monte Sereno General Plan (2008)

Cultural Resources Element

Goal OSC-9: Preserve cultural resources in Monte Sereno.

Policy OSC-9.2: Continue to enforce the City's Historic Preservation Ordinance.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Cultural and Historic Resources

Goal HC-8: Historic identity and cultural resources that are preserved for future generations.

Policy HC-8.1: Identify and protect heritage resources from loss and destruction.

Policy HC-8.2: Identify and Protect Resources. Identify and protect heritage resources from loss and destruction. (South County Joint Area Plan 15.09)

Policy HC-8.3: Demolition. Prior to approving demolition or alteration of historically significant buildings, evaluate alternatives, including structural preservation, relocation or other mitigation, and demonstrate that financing has been secured for replacement use.

Policy HC-8.4: Tribal Consultation. Consult with Native American tribes that have ancestral ties to Morgan Hill regarding proposed new development projects and land use policy changes.

Policy HC-8.5: Mitigation. Require that if cultural resources, including tribal, archaeological, or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

Policy HC-8.A: Update Inventory. Review and update the inventory of historic resources.

Policy HC-8.B: Technical Assistance. Provide clear and easily accessible information to property owners and developers about design guidelines, financing options, assistance programs, and other technical issues involved in preserving and restoring historic buildings.

Municipal Code and Ordinances

Most of the City's regulations for cultural resources are deferred to their Historic Resources Code that is within Section 18.60 of the Municipal Code (City of Morgan Hill 2021). The code is comprehensive but largely emphasizes the protection, restoration, and treatment of historic structures rather than archaeological sites. Section 18.60.090, however, addresses archaeological resources. The City maintains an archaeological sensitivity map and the Municipal Code requires that developers request a record search to determine if known archaeological sites are in or near a proposed development. If a known archaeological site is within or adjacent to a project area, appropriate mitigation measures must be developed. If a known archaeological site is not within or adjacent to a project area, an archaeological survey must be conducted, and the applicant must comply with standard conditions developed by the City. These standard conditions include having an archaeologist present onsite to monitor all ground-disturbing activities and treating any discovered archaeological resources appropriately. If human remains are discovered during construction, the project would comply with all applicable state and federal laws, including California Health and Safety Code Section 7050.5 and CEQA Guidelines Section 15064.5(e).

The City has also produced an Historic Context Statement that provides an extensive history of the city (CIRCA: Historic Property Development 2006). The document discusses historic themes and property types to assist in the NRHP/CRHR evaluation of cultural resources recorded within city limits.

Mountain View

Mountain View 2030 General Plan (2012)

Historic Preservation

Goal LUD-11: Preserved and protected important historic resources and encourage their continued protection and enhancement.

Policies

LUD 11.1: Historical preservation. Support the preservation and restoration of structures and cultural resources listed in the Mountain View Register of Historic Resources, the California Register of Historic Places or National Register of Historic Places.

LUD 11.2: Adaptive re-use. Encourage the adaptive re-use of historic buildings in ways that retain their historical materials and character-defining features.

LUD 11.3: Incentives. Encourage historical preservation through incentives and opportunities.

LUD 11.4: Moffett Field. Support the preservation of historic buildings and hangars at Moffett Field and NASA Ames.

LUD 11.5: Archaeological and paleontological site protection. Require all new development to meet state codes regarding the identification and protection of archaeological and paleontological deposits.

LUD 11.6: Human remains. Require all new development to meet state codes regarding the identification and protection of human remains.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2022)

Archaeological Resources

Policy L-7.15: Protect Palo Alto's archaeological resources, including natural land formations, sacred sites, the historical landscape, historic habitats and remains of settlements here before the founding of Palo Alto in the 19th century.

Policy L-7.16: Continue to consult with tribes as required by California Government Code Section 65352.3. In doing so, use appropriate procedures to accommodate tribal concerns when a tribe has a religious prohibition against revealing precise information about the location or previous practice at a particular sacred site.

Policy L-7.17: Assess the need for archaeological surveys and mitigation plans on a project-by-project basis, consistent with the California Environmental Quality Act and the National Historic Preservation Act

Policy L-7.18: Require project proponents to meet State codes and regulations regarding the identification and protection of archaeological and paleontological deposits, and unique geologic features.

San José

Envision San José 2040 General Plan (2011)

Goal IP-12: Environmental Clearance. Use the Environmental Clearance process to further implement Envision General Plan goals and policies related to the minimization of environmental impacts, improving fiscal sustainability, and enhancing the delivery of municipal services.

Policies – Environmental Clearance

IP-12.3: Use the Environmental Clearance process to identify potential impacts and to develop and incorporate environmentally beneficial actions, particularly those dealing with the avoidance of natural and human-made hazards and the preservation of natural, historical, archaeological and cultural resources.

Policies – Archaeology and Paleontology

Goal ER-10—Archaeology and Paleontology: Preserve and conserve archaeologically significant structures, sites, districts and artifacts in 32 order to promote a greater sense of historic awareness and community identity.

Policy ER-10.1: For proposed development sites that have been identified as archaeologically or paleontologically sensitive, require investigation during the planning process in order to determine whether potentially significant archeological or paleontological information may be affected by the project and then require, if needed, that appropriate mitigation measures be incorporated into the project design.

Policy ER-10.2: Recognizing that Native American human remains may be encountered at unexpected locations, impose a requirement on all development permits and tentative subdivision maps that upon their discovery during construction, development activity will cease until professional archaeological examination confirms whether the burial is human. If the remains are determined to be Native American, applicable state laws shall be enforced.

Policy ER-10.3: Ensure that City, State, and Federal historic preservation laws, regulations, and codes are enforced, including laws related to archaeological and paleontological resources, to ensure the adequate protection of historic and pre-historic resources.

Action – Archaeology and Paleontology

Action ER-10.4: The City will maintain a file of archaeological and paleontological survey reports by location to make such information retrievable for research purposes over time.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2002; update 2010)

Archaeological and Cultural Resources Goals

Goal 5.6.3-G1: Protection and preservation of cultural resources, as well as archaeological and paleontological sites.

Goal 5.6.3-G2: Appropriate mitigation in the event that human remains, archaeological resources or paleontological resources are discovered during construction activities.

Archaeological and Cultural Resources Policies

Policy 5.6.3-P1: Require that new development avoid or reduce potential impacts to archaeological, paleontological and cultural resources.

Policy 5.6.3-P2: Encourage salvage and preservation of scientifically valuable paleontological or archaeological materials.

Policy 5.6.3-P3: Consult with California Native American tribes prior to considering amendments to the City's General Plan.

Policy 5.6.3-P4: Require that a qualified paleontologist/archaeologist monitor all grading and/or excavation if there is a potential to affect archeological or paleontological resources, including sites within 500 feet of natural water courses and in the Old Quad neighborhood.

Policy 5.6.3-P5: In the event that archaeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist.

Policy 5.6.3-P6: In the event that human remains are discovered, work with the appropriate Native American representative and follow the procedures set forth in State law.

Saratoga

City of Saratoga 2040 General Plan (2024)

Open Space and Conservation Element

Cultural Resources

Goal OSC-13: Through coordination with and implementation of other related General Plan Policies, encourage preservation of the City's heritage by providing for the protection of irreplaceable historic and cultural resources representing significant elements of City and regional history.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Heritage Preservation

Goal CC-5: To enhance, preserve and protect Sunnyvale's heritage including natural features, the built environment, and significant artifacts.

Policy CC-5.1: Preserve existing landmarks and cultural resources and their environmental settings.

Policy CC-5.5: Archeological resources should be preserved whenever possible.

Energy

Valley Water

Santa Clara County

Santa Clara County General Plan

The Santa Clara County General Plan (County 1994) contains the following policies relevant to energy:

General Policies

Policy C-RC 77: Energy efficiency and conservation efforts in the transportation, industrial, commercial, residential, agricultural and public sectors shall be encouraged at the local, county (subregional), and regional level.

Policy C-RC 78: The objectives of the state energy plan should be implemented at the local and regional level through an overall strategy consisting of a) reducing transportation energy demand and oil-dependency; b) conserving energy in residential, commercial, agricultural, and industrial sectors; and c) increasing consumer and general public awareness through education.

Strategy #1: Reduce Transportation Energy Demand and Oil-Dependency

Policy C-RC 79: Energy use and fossil fuel dependency in the transportation sector should be reduced by the following general means: a) growth management policies and implementation to minimize increases in the extent of the urbanized area and to promote balanced, compact urban development; b) land use and development standards which support alternative transportation modes; c) travel demand management (TDM) and transportation system operational efficiency; d) expanded transit service; and e) increased availability and use of alternative fuels.

Policy C-RC 80: Sub-regional/countywide planning for Santa Clara County should place major emphasis on the inter-related goals, strategies, and policies for improving energy efficiency in transportation, air quality, and reducing traffic congestion.

Strategy #2: Conserve Energy in Residential and Other Sectors

Policy C-RC 82: Alternatives to non-renewable energy sources should be encouraged and implemented in the design of new buildings and incorporated in the redesign and reconstruction of older buildings.

Policy C-RC 83: Industrial and agricultural processes should be modified wherever feasible to take advantage of energy savings, to reduce operational costs, and to enhance competitiveness.

Health Element (County 2015)

The Santa Clara County General Plan's Health Element (County 2015) contains the following policies relevant to energy:

Policy HE-G.10: Conservation. Promote energy conservation and efficiency in homes, businesses, schools, and other infrastructure to reduce energy use and criteria pollutant and greenhouse gas emissions.

Policy HE-G.11: Renewable energy. Encourage renewable energy, such as solar and wind turbines, on commercial, industrial, and residential buildings.

Policy HE-G.12: Energy technologies. Support regional and local initiatives that promote integrated building systems, distributed generation, demand response programs, smart grid infrastructure, energy storage and backup, and electric transportation infrastructure.

Sustainability Master Plan (2021)

Strategy 1.1. Clean Energy.

Goal #1: Carbon Neutrality Transition to a zero-emission energy system.

Transition to a 100% renewable energy system by 2045 (aligns with California Senate Bill 100, Renewable Portfolio Standard).

Strategy 1.2: Decarbonization of Buildings and Facilities: The County has set the target for all new County-owned buildings to meet CALGreen Tier 1 requirements and for large projects to be Leadership in Energy and Environmental Design (LEED) certified. The County will also evaluate strategies and implement pilot projects for zero-net energy retrofits, solar hot water, boiler efficiency measures or biogas procurement that contribute toward County facility decarbonization over the next five years. The County will ensure that the most energy-efficient lighting is installed where the savings will cover the cost of the lighting investments. The County will increase the number of electric vehicle chargers at County facilities and work to decarbonize all healthcare facilities and operations. The County also includes a target to reduce per capita energy use by at least 50 percent. The County will

increase the overall energy savings achieved through Bay Area Regional Energy rebate programs.

Strategy 1.3: Clean, Safe, and Active Transportation: The County will ensure that 100 percent of public fleet vehicles are electric, hybrid-electric, or run on alternative fuels where alternatives exist. The County will establish telecommuting policies and targets to reduce greenhouse gas emissions from employee commutes. The County will decrease the percentage of single-occupancy vehicles employee commutes by at least 10 percent below the 2020 Employee Commute Survey levels by calendar year 2022. The County will adopt Complete Streets policies into the General Plan Circulation and Mobility Element by 2024. The County will also adopt a County Active Transportation Plan and identify targets to track progress. Finally, the County will increase the percentage of people age 16 and over who walk, bike, or take public transportation to work.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Safety Element

Policy SA-7.3: Encourage and support private sector investment in climate adaptation through climate-resilient infrastructure such as onsite renewable energy, integrated stormwater management, and water conservation.

Policy SA-7.4: Promote community awareness of climate-resilient actions that can be implemented by citizens and businesses, such as water conservation, on-site water collection, passive solar designs, and alternative energy strategies.

Action SA-7. d: Collaborate with utility providers to ensure that infrastructure and resource management plans account for anticipated climate change impacts.

Action SA-7. e: Implement the policies and actions in the Community Services and Facilities and Conservation Elements that promote water and energy efficiency and conservation in new capital projects, expansions, and retrofits to civic buildings and infrastructure.

Action SA-7. f: Utilize the Silicon Valley 2.0 Climate Adaptation Guidebook (or its successor document) as a resource tool when undertaking communitywide planning efforts, including updates to infrastructure plans.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Environmental Resources Element

Policy ES-1.1.1: Climate Action Plan (CAP). Adopt, implement and maintain a Climate Action Plan to attain greenhouse gas emission targets consistent with state law and regional requirements. This qualified greenhouse gas emissions reduction plan, by BAAQMD's definition, will allow for future project CEQA streamlining and will identify measures to:

- Reduce energy use through conservation and efficiency;
- Reduce fossil fuel use through multi-modal and alternative transportation; • Maximize use of and, where feasible, install renewable energy resources;
- Increase citywide water conservation and recycled water use;
- Accelerate Resource Recovery through expanded recycling, composting, extended producer responsibility and procurement practices; and
- Promote and incentivize each of those efforts to maximize community participation and impacts;
- Integrate multiple benefits of green infrastructure with climate resiliency and adaptation.

Policy ES-1.1.3: Climate Adaptation and Resiliency. Conduct a climate vulnerability assessment and set preparedness goals and strategies to safeguard human health and community assets susceptible to the impacts of a changing climate (e.g., increased drought, wildfires, flooding). Incorporate these into all relevant plans, including the Emergency Preparedness Plan, Local Hazard Mitigation Plan, Dam Failure Plan, Climate Action Plan, Watershed Protection Plan, and Energy Assuredness Plan.

Climate Action Plan 2.0 (2022)

Electrify or otherwise decarbonize 34% of off-road equipment by 2030 and 35% by 2040. Leverage the carbon sequestration potential of open space and carbon removal by 2025, develop an ordinance to ban local operation of gasoline and diesel-powered off-road equipment by 2030 to improve public health, reduce noise, and reduce local GHG emissions. This ordinance can build upon the noise ordinance which regulates landscaping equipment. Include allowance for biofuels (i.e., renewable diesel) for equipment for which zero emission alternatives are not available in the ordinance.

Gilroy

There are no relevant local laws or policies for the City of Gilroy.

Los Altos

Climate Action and Adaptation Plan (2022)

Transportation

Strategy 2: *Electrify Transportation*

GOALS:

Reach 80% Community-Wide Electric Vehicle Adoption by 2035

Accelerate Community-Wide Electric Vehicle Supply Equipment Sufficient to Support 80% EVs

Strategy 3: *Electrify Off-Road Mobile Sources*

GOAL:

Eliminate Off-Road Fossil Fuel Engines

Energy

Strategy 1: *Reduce Emissions from Energy Consumption*

GOAL:

Encourage Energy Conservation Measures in Homes and Businesses

Strategy 2: *Facilitate Building Decarbonization*

GOALS:

Require All-Electric New Buildings, ADUs, and Major Retrofits

Reduce or Eliminate Methane Gas Use in Existing Buildings by Increasing Fuel Switching

Disincentivize Methane Gas

Strategy 3: *Increase Solar Energy Production*

GOAL:

Expand Community Solar and Battery Storage

Municipal Operations

Strategy 1: *Operate Sustainable Municipal Buildings*

GOALS:

Reduce Municipal Building Energy Use by 30% by 2035

Install Solar + Battery Storage at City facilities"

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

GOAL 8: Promote energy-efficient construction and the use of alternative energy sources.

Policy 8.1: Promote the incorporation of energy conservation measures in new construction.

Policy 8.2: Encourage active and passive solar energy design in building and site development.

Policy 8.3: Expand the use of alternative fuels for Town vehicles by purchasing hybrids and other fuel-efficient vehicles.

Program 8.1: Incorporate energy efficiency measures in new Town facilities.

Program 8.2: Continue to develop and offer incentives for energy conservation.

Climate Action Plan (2021)

The Climate Action Plan contains the following goal and measures.

Goal: Reduction in natural gas use through electrifying homes

Battery Storage: Install storage to match PV production to Town Hall loads

Town Hall Electrification: Convert the natural gas loads at town hall to electric

V2G: Town Vehicle to Grid for resiliency pilot

Green Fleet: Green Fleet Program with EV First commitment

EV Charging: Free EV charging for town staff

Renewable Diesel: Town Government and Fire District shift to renewable diesel

Assessments: Town funded walkthrough electrification consultant low cost or free

Streamline: Simplify city permitting processes and reduce fees for electrification conversions

Financing: Join in promoting the BE smart program tariff on-bill financing to SVCE

Incentives: Provide incentives & programs to eliminate natural gas use in buildings by 2045.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Environmental and Sustainability Element

Policy ENV 10.2: Energy-Efficient Town Operations: Continue to encourage Town operations to pursue and model waste reduction and recycling methodologies in Town facilities for the community.

ENV-11: Source clean, efficient energy supplies from cost-effective, renewable sources.

Policy ENV 11.1: Carbon Neutral Energy: Support SCVE to continue to procure carbon-neutral energy for long-term and short-term supplies, including renewable resources.

Policy ENV 11.2: Energy Efficiency in Municipal Facilities: Invest in cost-effective energy efficiency and energy conservation programs in municipal facilities.

Policy ENV 11.3: Future Demand Reduction: Explore cost-effective, reliable, and feasible energy efficiency and demand reduction opportunities and continue to use the Sustainability Plan to include education programs for these opportunities.

Policy ENV 11.4: Conservation and Reduction: Maximize the conservation and efficient use of energy in existing and new residences, businesses, and municipal buildings in Los Gatos.

Policy ENV 11.5: Solar Systems: Support the maximum economic use of solar electric (photovoltaic) systems on-site to augment the renewable energy portfolio available to new development, businesses, and municipal facilities.

Policy ENV 11.6: Organic Waste Recycling: Comply with SB 1383 regulations to maximize energy recovery from organic materials such as yard trimmings, food waste, and other compostable resources.

Milpitas

Milpitas 2040 General Plan (2021)

Conservation and Sustainability Element

Goal CON-1: Ensure a sustainable future for the city of Milpitas by promoting a carbon free energy future that increases renewable resources, conservation, and efficiency throughout the city.

Policy CON 1-1: Ensure that new development is consistent with the energy objectives and targets identified by the City's Climate Action Plan (CAP).

Policy CON 1-2: Ensure all development projects comply with the mandatory energy efficiency requirements of the California Green Building Standards Code (CALGreen).

Policy CON 1-3: Support innovative green building best management practices including, but not limited to, LEED certification, and encourage project applicants to exceed the most current "green" development standards in the California Code of Regulations (CCR), Title 24, as feasible.

Policy CON 1-4: Require large-scale industrial and manufacturing energy users to implement an energy conservation plan as part of the project review and approval process.

Policy CON 1-5: Consider lifecycle costs when identifying opportunities for the replacement and retrofit of energy efficient technologies when upgrading or maintaining City facilities.

Policy CON 1-6: Reduce the City's energy demand by pursuing the use of alternative energy and fuel-efficient City vehicles and equipment and strive for a zero-emission City vehicle fleet to the extent feasible and practical.

Policy CON 1-7: Support the production of alternative and renewable energy fueling stations in Milpitas.

Policy CON 1-8: Encourage energy efficiency and conservation through public awareness and educational opportunities.

Policy CON 1-9: Encourage site planning and building techniques that promote energy conservation. Where feasible, encourage projects to take advantage of shade, prevailing winds, landscaping, sunscreens, building orientations, and material choices that reduce energy use.

Policy CON 1-11: Consider incentive programs such as reduced fees, and permit expedition for projects that exceed mandatory energy requirements, incorporate alternative energy technologies, or support the City's energy objectives.

Policy CON 1-12: Promote incentives from local, state, and federal agencies for improving energy efficiency and expanding renewable energy installations.

Policy CON 1-13: Support projects and programs such as appliance upgrades and the use of electric appliances, and energy storage options that reduce the use of and reliance on natural gas.

Goal SA-6: Minimize risk to life, property, the economy, and the environment through climate adaptation strategies that enhance and promote Milpitas' community resiliency

Policy SA 6-3: Encourage and support private sector investment in climate adaptation through climate-resilient infrastructure such as onsite renewable energy, integrated stormwater management and water conservation.

Policy SA 6-4: Promote community awareness of climate-resilient actions that can be implemented by homeowners, such as water conservation, on-site water collection, passive solar designs, and alternative energy strategies.

Policy SA 6-8: Participate in regional climate adaptation planning efforts. CON 1-10 Encourage distributed energy resources including solar, fuel cells etc. to provide environmental benefits, as well as energy security, and the support of the grid during peak energy use periods.

Utilities and Community Services Element

Goal UCS-6: Ensure adequate, reliable electric and natural gas service is available to all users.

Policies:

UCS 6-1: Work cooperatively with utility providers to ensure the provision of adequate electric power and natural gas services and facilities to serve the needs of existing and future residents and businesses.

UCS 6-2: Coordinate with service providers in the siting and design of power facilities to minimize environmental, aesthetic, and safety impacts.

UCS 6-3: Require that all new power and gas lines and transformers are installed underground where feasible and promote the undergrounding of existing overhead facilities.

Climate Action Plan Update (2022)

Strategy BE-1: Shift to Clean and Reliable Energy

Measure BE 1.1: Achieve 100 percent carbon-free electricity by 2030 in all existing and new development.

Measure BE 1.2: Facilitate innovative approaches to energy generation, distribution, and storage (e.g. microgrids).

Measure BE 1.3: Strengthen community awareness of energy efficiency, energy conservation, electrification, and clean energy.

Strategy BE-2: Maximize Building Decarbonization and Efficiency

Measure BE 2.1: Adopt updated ""reach"" building codes with each building and energy code cycle to accelerate all-electric new development.

Measure BE 2.2: Facilitate all-electric development projects for industrial buildings.

Measure BE 2.3: Expand the City's Green Building Program.

Measure BE 2.4: Retrofit existing residential and nonresidential buildings and municipal facilities to improve energy efficiency and facilitate fuel switching.

Measure BE 2.5: Facilitate energy audits for existing buildings to identify energy efficiency retrofit and electrification opportunities.

Measure BE 2.6: Reduce plug loads in existing buildings.

Monte Sereno

Monte Sereno General Plan (2008)

Open Space and Conservation Element

Goal OSC-1: Reduce Greenhouse gas emissions by providing leadership in climate protection.

Policy OSC-1.3: Support a reduction in the city's peak electric load through increases in energy efficiency, conservation and shifting the timing of energy demands.

Policy OSC-1.6: Require all new and remodeled homes to complete the green sustainability checklist.

Policy OSC-1.7: Consider solar access and orientation in the review of proposed residential development projects.

Policy OSC-1.8: Encourage the use of energy-efficient appliances in residences.

Policy OSC-1.9: When upgrading appliances or equipment in City buildings, require energy-efficient upgrades.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Natural Resources and Environment Element

GOAL NRE-16: Conservation of energy resources.

Policy NRE-16.1: Energy Standards for New Development. New development, including public buildings, should be designed to exceed State standards for the use of energy.

Policy NRE-16.2: Energy Conservation. Promote energy conservation techniques and energy efficiency in building design, orientation, and construction.

Policy NRE-16.3: Energy Use Data and Analysis. Provide information to increase building owner, tenant, and operator knowledge about how, when, and where building energy is used.

Policy NRE-16.4: Retrofit Financing. Promote existing and support development of new private financing options for building retrofits and renewable energy development.

Policy NRE-16.5: Energy Efficiency. Encourage development project designs that protect and improve air quality and minimize direct and indirect air pollutant emissions by including components that promote energy efficiency.

Policy NRE-16.6: Landscaping for Energy Conservation. Encourage landscaping plans for new development to address the planting of trees and shrubs that will provide shade to reduce the need for cooling systems and allow for winter daylighting.

Policy NRE-16.7: Renewable Energy. Encourage new and existing development to incorporate renewable energy generating features, like solar panels and solar hot water heaters.

Policy NRE-16.8: Residential Development Code. Emphasize energy conservation building techniques for new residential construction through the implementation of Chapter 18.78 of the Municipal Code.

Policy NRE-16.9: Subdivision Design. In compliance with Section 66473.1 of the State Subdivision Map Act, promote subdivision design that provides for passive solar heating and natural cooling through the Development Review Committee subdivision review procedures.

Action NRE-16.A: Community Choice Aggregation. Partner with other Santa Clara County jurisdictions to determine the feasibility for development of a regional CCA program, including identification of the geographic

scope, potential costs to participating jurisdictions and residents, and potential liabilities.

Climate Action Plan (2021)

Main Goal:

Reduce Morgan Hill's net CO2 emissions in the building and transportation sectors 35% below the 2020 baseline level by 2030 and 100% below the 2020 baseline level by 2045.

Subgoals for Transportation Sector

1. Expand electric vehicle charging station access for existing multifamily complexes by 30%, (i.e., the number of chargers in multifamily complexes will be equivalent to at least 30% of the number of units in multifamily complexes) by the year 2025 and 100% by 2035.

2. Transition 50% of the municipal fleet from fossil fuel to electric by 2030 and 100% by 2035.

3. Require newly constructed residential buildings to have the necessary capacity to facilitate EV charging.

4. Install EV charging stations for at least 10% of available parking spaces in new non-residential projects.

Subgoals for Building Sector

1. Transition 95% of existing buildings (roughly 14,000) in Morgan Hill to be all-electric by 2045, with additional targets every five years consisting of:

    - 1% of existing buildings by 2025
    - 10% of existing buildings by 2030
    - 35% of existing buildings by 2035
    - 70% of existing buildings by 2040

2. Convert all municipal buildings to all-electric by 2035

Mountain View

Mountain View 2030 General Plan (2012)

Infrastructure and Conservation Element

Goal INC-13: Increased energy efficiency and conservation throughout the city.

Policies:

INC 13.1: Energy efficiency and conservation. Increase energy efficiency and conservation in public buildings and infrastructure.

INC 13.2: Alternatives to gasoline. Promote and increase the use of new technologies as alternatives and supplements to gasoline in vehicles throughout the community.

INC 13.3: Coordinating efforts. Support regional and local efforts and programs to reduce energy use.

INC 13.4: Education. Educate the public about energy conservation and efficiency best practices.

INC 13.5: Smart utility meters. Encourage utility meter technologies that provide feedback about energy usage to customers.

Goal INC-14: Sufficient renewable sources of energy to meet current and future demand.

Policies:

INC 14.1: Renewable energy. Promote the deployment of renewable energy technologies throughout the city.

INC 14.2: Solar energy. Encourage active and passive solar energy use.

INC 14.3: Regional renewable energy. Participate in regional initiatives to encourage and develop renewable energy sources.

INC 14.4: Renewable energy advocacy. Support legislation to facilitate and increase renewable energy choices for community residents such as green utility power options or distributed generation."

Climate Protection Roadmap (2015)

Building Energy Strategies

Strategy A) *Lower-Carbon Electricity*

Mechanism A.1. Community Choice Energy Policy

Mechanism A.2. Large-Scale Renewable Electricity Generation

Strategy B) *Renewable Energy Generation – Solar Photovoltaic*

Mechanism B.1. Mandatory Solar Photovoltaic Requirements for New Construction

Mechanism B.2. Solar Power Districts Policy and Program

Strategy C) *Renewable Energy Generation – Solar Hot Water*

Mechanism C.1. Solar Hot Water Campaign

Mechanism C.2. Mandatory Solar Hot Water Policy

Strategy D) *Fuel Switching – Heating and Hot Water: From Natural Gas to Electric Heat Pumps*

Mechanism D.1. Heat Pump Promotional Campaign

Mechanism D.2. Heat Pump Permit Streamlining

Mechanism D.3. Mandatory Electric Heat Pump Policy

Strategy E) *Energy Efficiency – Existing Buildings*

Mechanism E.1. Advanced Energy-Use Analytics Promotion

Mechanism E.2. Energy-Management Systems Promotion

Mechanism E.3. Commercial District Partnerships

Mechanism E.4. Building Benchmarking and Disclosure Policy

Mechanism E.5. Point-of-Sale Energy Rating Policy

Mechanism E.6. Building Commissioning Promotion

Mechanism E.7. Mandatory Retro-Commissioning Policy

Strategy F) *Energy Efficiency – New Construction*

Mechanism F.1. Zero-Energy Building Code

Mechanism F.2. Passive Home Energy Design Policy

Mechanism F.3. Energy -Efficient Appliance Policy

Strategy G) *Business Green Upgrades **

Mechanism G.1. Business Green Upgrades Promotion

Strategy H) *PACE Programs **

Mechanism H.1. PACE Programs Evaluation/Adoption

Strategy I) *Community Outreach **

Mechanism I.1. Community Outreach and Assistance

Transportation Strategies

Strategy *A) Fuel Switching – Compressed Natural Gas (CNG)*

Mechanism A.1. Publicly Accessible CNG Fueling Stations

Mechanism A.2. Shared Commercial CNG Fueling Station Outreach Program

***Strategy** B) Fuel Switching – Electric Vehicles (EV)*

Mechanism B.1. Community EV Adoption Campaign

Mechanism B.2. Publicly-Accessible EV Charging Facilities

Mechanism B.3. Parking Facility EV Charging Standards

Mechanism B.4. Residential Multi-Family EV Charging Standards

Mechanism B.5. Residential Single-Family E V Charging Standards

***Strategy** C) Fuel Switching – Second Generation Biofuels*

Mechanism C.1. Encourage Development of Biofuel Stations

Mechanism C.2. Waste-To-Biogas Facility for Fleet Vehicles

***Strategy** D) Hydrogen Fuel **

Mechanism D.1. Hydrogen Fuel Exploration

Sustainability Action Plan 4 (2019)

The Sustinability Action Plan 4 contains the following actions.

Transportation

Action T1. Develop comprehensive, multi-modal transportation plans and strategies to decarbonize the sector.

Action T7. Accelerate the electrification of vehicles.

Buildings and Energy

Action B1. Reduce GHG emissions from energy use in new buildings.

Action B2. Reduce GHG emissions from energy use in existing buildings.

Action B3. Decarbonize the energy supply.

Action B4. Decarbonize and improve the efficiency of City facilities.

Carbon Neutrality Resolution (2020)

In April 2020, the City Council passed a resolution for Mountain View to become a carbon neutral city by 2045. This means that in addition to achieving the adopted 2045 greenhouse gas (GHG) reduction target of 75% below 2005 levels, Mountain View has committed to balancing any remaining GHG emissions with carbon sequestration projects (such as planting trees or restoring wetlands) and/or carbon offsets.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Natural Environment Element

GOAL N-7: A clean, efficient energy supply that makes use of cost-effective renewable resources.

Policy N-7.1: Continue to procure carbon neutral energy for both long-term and short-term energy supplies, including renewable and hydroelectric resources, while investing in cost-effective energy efficiency and energy conservation programs

Policy N-7.2: Advance the development of a "smart" energy grid, a diverse energy resource portfolio, and technologically advanced public utilities as a key part of a smart and connected city.

Policy N-7.3: Prioritize the identification and implementation of cost-effective, reliable and feasible energy efficiency and demand reduction opportunities.

Policy N-7.4: Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.

Policy N-7.5: Encourage energy efficient lighting that protects dark skies and promotes energy conservation by minimizing light and glare from development while ensuring public health and safety.

Policy N-7.6: Support the maximum economic use of solar electric (photovoltaic) and solar thermal energy, both as renewable supply resources for the Electric Utility Portfolio and as alternative forms of local power generation.

Policy N-7.7: Explore a variety of cost-effective ways to reduce natural gas usage in existing and new buildings in Palo Alto in order to reduce associated greenhouse gas emissions.

Policy N-7.8: Support opportunities to maximize energy recovery from organic materials such as food scraps, yard trimmings and residual solids from sewage treatment.

Sustainability and Climate Action Plan (2022)

Goal (Energy): Modernize the electric grid to support increased electric demand and to accommodate state-of-the-art technology.

Goal (Electric Vehicles): Reduce transportation related GHG emissions at least 65% below 1990 levels (215,696 MT CO2e reduction)

Goal (Electric Vehicles): Develop a public and private charging network to support EV adoption.

Goal (Mobility): Reduce total vehicle miles traveled 12% by 2030, compared to a 2019 baseline, by reducing commute vehicle miles traveled 20%, visitor vehicles miles traveled 10%, and resident vehicle miles traveled 6%.

Goal (Mobility): Increase the mode share for active transportation (walking, biking) and transit from 19% to 40% of local work trips by 2030.

San José

Envision San José 2040 General Plan (2011)

Measurable Environmental Sustainability

Goal MS-2: Energy Conservation and Renewable Energy Use: Maximize the use of green building practices in new and existing development to maximize energy efficiency and conservation and to maximize the use of renewable energy sources.

Policy MS-2.4: Promote energy efficient construction industry practices.

Goal MS-14: Reduce Consumption and Increase Efficiency: Reduce per capita energy consumption by at least 50% compared to 2008 levels by 2022 and maintain or reduce net aggregate energy consumption levels equivalent to the 2022 (Green Vision) level through 2040.

Policies: Reduce Consumption and Increase Efficiency

Policy MS-14.1: Promote job and housing growth in areas served by public transit and that have community amenities within a 20-minute walking distance.

Policy MS-14.2: Enhance existing neighborhoods by adding a mix of uses that facilitate biking, walking, or transit ridership through improved access to shopping, employment, community services, and gathering places.

Policy MS-14.3: Consistent with the California Public Utilities Commission's California Long Term Energy Efficiency Strategic Plan, as revised, and when technological advances make it feasible, require all new residential and commercial construction to be designed for zero net energy use.

Policy MS-14.4: Implement the City's Green Building Policies (see Green Building Section) so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design, and planting of trees and other landscape materials to reduce energy consumption.

Policy MS-14.5: Consistent with State and Federal policies and best practices, require energy efficiency audits and retrofits prior to or at the same time as consideration of solar electric improvements.

Goal MS-15: Renewable Energy: Receive 100% of electrical power from clean renewable sources (e.g., solar, wind, hydrogen) by 2022 and to the greatest degree feasible increase generation of clean, renewable energy within the City to meet its own energy consumption needs.

Policies – Renewable Energy

Policy MS-15.1: Promote removal of demand-side barriers to adoption of a diverse array of renewable energy and energy efficiency technologies. Demand-side barriers include:

- Cost (e.g., equipment, permitting, etc.)
- Difficulty getting small-scale products to market
- Workforce availability
- Lack of public awareness about the need for and availability of such products and technologies
- State and Federal policies not supporting a diverse array of technologies

Policy MS-15.2: Lead globally in adopting technologies that transform solid waste and biosolids (i.e., the solids that remain after wastewater treatment) into usable energy.

Policy MS-15.3: Facilitate the installation of at least 100,000 solar roofs in San José by 2022 and at least 200,000 solar roofs by 2040.

Policy MS-15.4: Promote local innovation, research, development, and deployment of renewable energy and energy efficiency technologies.

Policy MS-15.5: Showcase and apply innovative technologies within San José, including developments that achieve maximum energy efficiency or net zero energy, and renewable energy systems that generate energy equal to or greater than that consumed on site.

Policy MS-15.6: Utilize municipal facilities to showcase the application of outstanding, innovative, and locally developed energy efficiency and renewable energy technologies and practices, to demonstrate the effectiveness of these technologies and to highlight the City's energy leadership.

Goal MS-16: Energy Security: Provide access to clean, renewable, and reliable energy for all San José residents and businesses.

Policies – Energy Security

Policy MS-16.1: Promote availability of a variety of tools and services for implementing energy conservation and renewable energy generation, including financing districts, energy auditing, and energy efficiency retrofit services to all residents and business owners.

Policy MS-16.2: Promote neighborhood-based distributed clean/renewable energy generation to improve local energy security and to reduce the amount of energy wasted in transmitting electricity over long distances.

Policy MS-16.3: Consider benefits and risks of alternative energy sources and evaluate the City's position on alternative energy sources.

2030 Greenhouse Gas Reduction Strategy (2020)

Strategy GHGRS 1: San José Clean Energy. The City will implement the San José Clean Energy program to provide residents and businesses access to cleaner energy at competitive rates.

Strategy GHGRS 2: Zero Net Carbon – Residential Construction. The City will implement its building reach code ordinance (adopted September 2019) and its prohibition of natural gas infrastructure ordinance (adopted October 2019) to guide the city's new construction toward zero net carbon (ZNC) buildings.

Strategy GHGRS 3: Renewable Energy Development. The City will expand development of rooftop solar energy through the provision of technical assistance and supportive financial incentives to make progress toward the Climate Smart San José goal of becoming a one-gigawatt solar city.

Strategy GHGRS 4: Building Retrofits – Natural Gas. The City will support a transition to building decarbonization through increased efficiency improvements in the existing building stock and reduced use of natural gas appliances and equipment.

Climate Smart San José

Climate Smart San José was adopted by the San José City Council in 2018 and is the City's overarching visionary plan to reduce emissions geared toward the Paris Agreement. Climate Smart San José serves as a roadmap to deep carbon reductions aligned with the State's GHG targets set by AB 32, SB 32, and EO S-3-05, as well as the decarbonization goals of the Paris Agreement, while supporting 40 percent growth in the city's population by 2050 and continued economic growth. It employs a people-centered approach, encouraging the entire San José community to join an ambitious campaign to reduce GHG emissions, save water, and improve the community's quality of life, while also promoting economic growth (City of San José 2018). In November 2021, the City Council set a goal of community-wide carbon neutrality by 2030 thereby accelerating Climate Smart. The proposed Pathway to Carbon Neutrality by 2030 was heard by City Council on June 14, 2022, which contains four strategies to achieve carbon neutrality by 2030: move to zero-emission vehicles, reduce the miles travelled in vehicles by at least 20 percent, switch appliances from fossil fuels to electric, and power the community with 100 percent carbon-neutral electricity (City of San José 2022).

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

Energy

Goals

Goal 5.10.3-G1: Energy supply and distribution maximizes the use of renewable resources.

Goal 5.10.3-G2: Implementation of energy conservation measures to reduce consumption.

Goal 5.10.3-G3: Adequate energy service to residents, businesses, and municipal operations.

Policies

Policy 5.10.3-P1: Promote the use of renewable energy resources, conservation and recycling programs.

Policy 5.10.3-P2: Transition away from using coal as an energy source to renewable resources by replacing coal in Silicon Valley Power's portfolio, exploring City owned property for renewable energy projects, developing solar projects, and incentivizing solar projects for residents and businesses, consistent with the CAP.

Policy 5.10.3-P:3 Maximize the efficient use of energy throughout the community by achieving adopted electricity efficiency targets and promoting natural gas efficiency, consistent with the CAP.

Policy 5.10.3-P4: Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.

Policy 5.10.3-P5: Reduce energy consumption through sustainable construction practices, materials and recycling.

Policy 5.10.3-P6: Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.

Policy 5.10.3-P7: Encourage installation of solar energy collection through solar hot water heaters and photovoltaic arrays.

Policy 5.10.3-P8: Provide incentives for LEED certified, or equivalent development.

Policy 5.10.3-P9: Incorporate criteria for sustainable building and solar access into the City’s ordinances and regulations.

Policy 5.10.3-P10: Maintain the City’s level of service for high quality utilities and telecommunications infrastructure.

Policy 5.10.3-P11: Continue innovative energy programs to develop cost effective alternative power sources and encourage conservation.

Policy 5.10.3-P12: Work with Silicon Valley Power to implement adequate energy distribution facilities to meet the demand generated by new development.

Policy 5.10.3-P13: Work with the City of San Francisco to explore opportunities to share the Hetch-Hetchy right-of-way for electrical facilities.

Policy 5.10.3-P14: Work with Pacific Gas and Electric to ensure an adequate supply of natural gas to meet the demand generated by new development.

Policy 5.10.3-P15: Explore opportunities for alternative energy "fueling stations" and promote participation in shuttle services that use new technology vehicles to reduce greenhouse gas emissions.

Climate Action Plan (2022)

Achieving our long-term goal of carbon neutrality no later than 2045.

Strategy B1: Shift to electric fuels in new and existing buildings to achieve net-zero carbon buildings.

Strategy B2: Improve energy efficiency.

Strategy B3: Maximize renewable energy generation and storage capacity.

Strategy T1: Transition vehicles to electric alternatives.

Strategy T2: Expand clean mobility options and use of non-SOV transportation modes.

Saratoga

There are no relevant local laws or policies for the City of Saratoga.

Sunnyvale

Climate Action Playbook 2028 (2024)

Strategy 1: Promoting 100% Clean Electricity

Play 1.A: Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing electricity from a mix of carbon-free and eligible renewable sources and decarbonization programs to the Sunnyvale community.

Play 1.B : Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.

Play 1.E: Collaborate with SVCE to evaluate opportunities for energy storage to maximize utilization of local solar supply and to enhance resiliency.

Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Play 3.A: Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.

Play 3.B: Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.

Play 3.C: Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.

Play 3.D: Implement Active Transportation Plan (ATP) to achieve a connected, safe and active network.

Play 3.E: Continue to evaluate the potential for the shared bicycle and scooter pilot program as a permanent program.

Play 3.F: Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.

Play 3.G: Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.

Play 3.H: Create a TDM program for City staff to promote alternative transportation modes and carpooling to the greatest extent possible.

Play 3.I: Establish and implement a plan to convert vehicle roadways to bicycle and pedestrian space to increase opportunities for active transportation in the community.

Play 3.L: Continue implementing the Drive Electric Program and providing resources to assist and encourage community adoption of EVs.

Play 3.M: Electrify the Municipal Fleet as existing vehicles need replacement and install EV infrastructure (EVI) at municipal properties to support the electric fleet.

Play 3.P: Create a phased ordinance by 2026 to ban local operation of gasoline and diesel-powered off-road equipment by type, including banning local operation of gasoline and diesel-powered small off-road equipment (SORE) by 2028.

Greenhouse Gas Emissions

Santa Clara County

Santa Clara County General Plan (Adopted 1994; Amended 2015)

Health Element

Policy HE-C.20: Greenhouse gases and air quality. Promote plans and developments that reduce greenhouse gas emissions and result in decreased air pollution, especially for communities with disproportionate exposure to air pollution, and for vulnerable populations such as children, seniors, and those with respiratory illnesses.

Policy HE-G.1: Air quality environmental review. Continue to utilize and comply with the Air District's project- and plan-level thresholds of significance for air pollutants and greenhouse gas emissions.

Policy HE-G.2: Coordination with regional agencies. Coordinate with the Air District to promote and implement stationary and area source emission measures.

Policy HE-G.3: Fleet upgrades. Promote Air District mobile source measures to reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero emission and plug-in vehicles.

Policy HE-G.4: Off-road sources. Encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.

Policy HE-G.5: GHG reduction. Support efforts to reduce GHG emissions from mobile sources, such as reducing vehicle trips, vehicle use, vehicle miles traveled (VMT), vehicle idling, and traffic congestion. These efforts may include improved transit service, better roadway system efficiency, state-of-the-art signal timing and Intelligent Transportation Systems (ITS), transportation demand management, parking and roadway pricing strategies, and growth management measures.

Policy HE-G.6: Regional/local plans. Encourage and support regional and local land use planning that reduces automobile use and promotes active transportation.

Policy HE-G.7: Sensitive receptor uses. Promote measures to protect sensitive receptor uses, such as residential areas, schools, day care centers, recreational playfields and trails, and medical facilities by locating uses away from major roadways and stationary area sources of pollution, where possible, or incorporating feasible, effective mitigation measures.

Policy HE-G.8: CARE Communities focus. Promote awareness of geographic areas subject to persistently poorer air quality and assist the Air District in monitoring and reducing emissions from all sources in CARE communities.

Policy HE-G.9: Healthy infill development. Promote measures and mitigations for infill development to protect residents from air and noise pollution, such as more stringent building performance standards, proper siting criteria, development and environmental review processes, and enhanced air filtration.

Policy HE-G.10: Conservation. Promote energy conservation and efficiency in homes, businesses, schools, and other infrastructure to reduce energy use and criteria pollutant and greenhouse gas emissions.

Policy HE-G.11: Renewable energy. Encourage renewable energy, such as solar and wind turbines, on commercial, industrial, and residential buildings.

Policy HE-G.12: Energy technologies. Support regional and local initiatives that promote integrated building systems, distributed generation, demand response programs, smart grid infrastructure, energy storage and backup, and electric transportation infrastructure.

Policy HE-G.13: Fire prevention. Support state, federal, County, and other local efforts to prevent wildfires. Emphasize prevention cost-efficiency over that of ever-increasing expense of fighting and suppressing wildfires.

Policy HE-G.23: Climate change effects in emergency and disaster planning. Recognize and address the health effects of climate change in Local Hazard Mitigation Plans, Hazard Emergency Plans, General Plans, Specific Plans, and other policies and ordinances of every city in the County, as appropriate.

Policy HE-G.24: Public awareness. Increase public awareness and understanding of climate change impacts on health, and the need to prepare for these changes, including informing the general population and vulnerable communities about severe hazards from local and regional wildfires and health impacts from extreme heat days.

Policy HE-G.27: Vulnerable populations. Identify populations (e.g., seniors, pregnant women, children, homeless, mentally ill, people with chronic diseases, and outdoor workers) more vulnerable to, and exposed to, specific

climate changes in order to develop targeted population-level mitigation and adaptation strategies.

Santa Clara County Sustainability Master Plan

The Santa Clara County Sustainability Master Plan (2021) was created to help the County reduce climate pollution, adapt to global climate change, and enhance natural resources and the environment. The following strategies are relevant to GHG emissions and climate change:

Goal 1: Carbon Neutrality: Become a carbon neutral County that supports a transition to zero waste and zero emissions.

Strategy 1.1: Clean Energy: Transition to a zero-emission energy system.

Strategy 1.3: Clean, Safe, and Active Transportation. Expand zero-emission transportation/travel choices and create safe and accessible streets for all users.

Strategy 1.5: Zero Waste. Reduce overall waste generation by supporting the sustainable consumption of resources and diverting or reusing materials.

Strategy 1.6: Carbon Sequestration. Explore and implement practices that sequester carbon, including agricultural practices and urban ecology to help offset greenhouse gas emissions

Goal 2: Resilient and Prepared County: Increase preparedness and resilience to respond to the shocks and stressors that impact Santa Clara County and the services it provides.

Strategy 2.1: Planning and Assessment. Conduct and continually maintain a multi-hazard risk assessment to understand vulnerabilities across the County and regularly update resilience and climate adaptation plans and policies to address changing hazard risks and potential impacts to the efficient delivery of County services.

Strategy 2.2: Emergency Preparedness and Response. Implement hazard mitigation and climate adaptation strategies to increase preparedness and response and ensure the existing infrastructure/personnel are adequate to meet the existing levels of service while accommodating for future growth.

Campbell

Envision Campbell General Plan Update 2040 (2023)

<u>Safety Element</u>

Policy SA-7.1: Consider climate change impacts and adaptive responses in long-term planning and current development decisions.

Policy SA-7.2: Ensure that emergency response plans and training programs continue to evolve and are modified in order to protect residents, infrastructure, and facilities during emergencies and extreme weather events.

Policy SA-7.3: Encourage and support private sector investment in climate adaptation through climate-resilient infrastructure such as onsite renewable energy, integrated stormwater management, and water conservation.

Policy SA-7.4: Promote community awareness of climate-resilient actions that can be implemented by citizens and businesses, such as water conservation, on-site water collection, passive solar designs, and alternative energy strategies.

Policy SA-7.5: Ensure that climate impacts and climate adaptation measures aimed at reducing climate risks do not lead to disproportionally adverse effects on vulnerable populations.

Policy SA-7.6: Consider the needs of vulnerable populations and individuals with limited mobility when planning for access to safe and comfortable shelter during extreme heat events or other severe weather events, including widespread wildfire smoke.

Action SA-7. a: When updating master plans for infrastructure, including water supply, flood control and drainage, and critical facilities, review relevant climate change scenarios and ensure that the plans consider the potential effects of climate change and include measures that provide for resilience to climate impacts.

Action SA-7. b: Upon the next revision to the Campbell Emergency Operations Plan (EOP), identify and designate public buildings, specific private buildings, or institutions with air conditioning as public cooling shelters. Extend hours at airconditioned sites during periods of extreme heat or power outage and ensure sites are also supported by backup battery storage or generators.

Action SA-7.c: Periodically assess and monitor the effects of climate change and the associated levels of risk in order to adapt to changing climate conditions.

Action SA-7. d: Collaborate with utility providers to ensure that infrastructure and resource management plans account for anticipated climate change impacts.

Action SA-7. e: Implement the policies and actions in the Community Services and Facilities and Conservation Elements that promote water and energy efficiency and conservation in new capital projects, expansions, and retrofits to civic buildings and infrastructure.

Action SA-7. f: Utilize the Silicon Valley 2.0 Climate Adaptation Guidebook (or its successor document) as a resource tool when undertaking communitywide planning efforts, including updates to infrastructure plans.

Action SA-7. g: Continue to provide cooling center services to provide a respite for residents without access to air conditioning during extreme heat days.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Environmental Resources Element

Policy ES-1.1.1: Climate Action Plan (CAP). Adopt, implement and maintain a Climate Action Plan to attain greenhouse gas emission targets consistent with state law and regional requirements. This qualified greenhouse gas emissions reduction plan, by BAAQMD's definition, will allow for future project CEQA streamlining and will identify measures to:

- Reduce energy use through conservation and efficiency;
- Reduce fossil fuel use through multi-modal and alternative transportation; • Maximize use of and, where feasible, install renewable energy resources;
- Increase citywide water conservation and recycled water use;
- Accelerate Resource Recovery through expanded recycling, composting, extended producer responsibility and procurement practices; and
- Promote and incentivize each of those efforts to maximize community participation and impacts;
- Integrate multiple benefits of green infrastructure with climate resiliency and adaptation.

Policy ES-1.1.2: CAP and Sustainability Strategies Implementation. Periodically review and report on the effectiveness of the measures outlined in the CAP and the strategies in this Element. Institutionalize sustainability by developing a methodology to ensure all environmental, social and lifecycle costs are considered in project, program, policy and budget decisions.

Policy ES-1.1.3: Climate Adaptation and Resiliency. Conduct a climate vulnerability assessment and set preparedness goals and strategies to safeguard human health and community assets susceptible to the impacts of a changing climate (e.g., increased drought, wildfires, flooding). Incorporate these into all relevant plans, including the Emergency

Preparedness Plan, Local Hazard Mitigation Plan, Dam Failure Plan, Climate Action Plan, Watershed Protection Plan, and Energy Assuredness Plan.

Health and Safety Element

Policy HS-1.2: SEA LEVEL RISE PROTECTION Ensure all areas in Cupertino are adequately protected for the anticipated effects of sea level rise.

Strategies: HS-1.2.1: Monitor Rising Sea Level. Regularly coordinate with regional, state, and federal agencies on rising sea levels in the San Francisco Bay and major tributaries to determine if additional adaptation strategies should be implemented to address flooding hazards. This includes monitoring FEMA flood map updates to identify areas in the city susceptible to sea level rise, addressing changes to state and regional sea and bay level rise estimates, and coordinating with adjacent municipalities on flood control improvements as appropriate.

Climate Action Plan 2.0 (2022)

Electrify or otherwise decarbonize 34% of off-road equipment by 2030 and 35% by 2040. Leverage the carbon sequestration potential of open space and carbon removal by 2025, develop an ordinance to ban local operation of gasoline and diesel-powered off-road equipment by 2030 to improve public health, reduce noise, and reduce local GHG emissions. This ordinance can build upon the noise ordinance which regulates landscaping equipment. Include allowance for biofuels (i.e., renewable diesel) for equipment for which zero emission alternatives are not available in the ordinance.

Gilroy

City of Gilroy 2040 General Plan (2020)

Public Facilities and Services Element

Policy PFS 3.9: Water Conservation Programs. Coordinate with Valley Water to implement cost effective conservation strategies and programs that increase water use efficiency, including providing incentives for adoption of water efficiency measures. Water conservation strategies may include a combination of financial incentives, legislative actions, and public education.

Natural and Cultural Resources Element

Policy NCR 3.14: Prepare a Qualified GHG Reduction Plan. Pursue funding through grants and any other appropriate funding mechanisms, including California Air Resources Board's list of programs and projects, California State Coastal Conservancy's Climate Ready Grant Program, Climate Corps, and CivicSpark. The plan may be prepared by amending the Gilroy 2040 General Plan or by preparing a separate GHG reduction plan. In either case, requirements for a qualified GHG reduction plan as identified in CEQA Guidelines, § 15183.5 (b)(1)

must met. Accordingly, definition and implementation of GHG reduction measures in addition to those identified in Gilroy 2040 General Plan policies and programs may be required to show progress towards meeting the reduction targets established in the GHG reduction plan.

Los Altos

Los Altos General Plan 2002-2020

Natural Environment and Hazards Element

Goal 8: Maintain or improve air quality in Los Altos.

Policy 8.1: Support the principles of reducing air pollutants through land use, transportation, and energy use planning.

Policy 8.2: Encourage transportation modes that minimize contaminant emissions from motor vehicle use.

Policy 8.3 Interpret and implement the General Plan to be consistent with the regional Bay Area Air Quality Management Plan, as periodically updated.

Policy 8.4: Ensure location and design of development projects so as to conserve air quality and minimize direct and indirect emissions of air contaminants.

Climate Action and Adaptation Plan (2022)

Transportation

Strategy 1: *Reduce City-Wide Vehicle Miles Traveled by 25% by 2035*

GOALS:

Create a Walkable and Bikeable City

Promote Smart Growth Strategies

Support Shared Mobility

Strategy 2: *Electrify Transportation*

GOALS:

Reach 80% Community-Wide Electric Vehicle Adoption by 2035

Accelerate Community-Wide Electric Vehicle Supply Equipment Sufficient to Support 80% EVs

Strategy 3: *Electrify Off-Road Mobile Sources*

GOAL:

Eliminate Off-Road Fossil Fuel Engines

Energy

Strategy 1: *Reduce Emissions from Energy Consumption*

GOAL:

Encourage Energy Conservation Measures in Homes and Businesses

Strategy 2: *Facilitate Building Decarbonization*

GOALS:

Require All-Electric New Buildings, ADUs, and Major Retrofits

Reduce or Eliminate Methane Gas Use in Existing Buildings by Increasing Fuel Switching

Disincentivize Methane Gas

Strategy 3: *Increase Solar Energy Production*

GOAL:

Expand Community Solar and Battery Storage

Resource Conservation

Strategy 1: *Reduce Consumption and Waste*

GOALS:

Decrease Landfill Waste by 15% and Eliminate Single-Use Plastics and Construction Waste by 2035

Reduce Water Use by 15% by 2030

Promote a Circular Economy

Municipal Operations

Strategy 1: *Operate Sustainable Municipal Buildings*

GOALS:

Reduce Municipal Building Energy Use by 30% by 2035

Install Solar + Battery Storage at City facilities

Strategy 2: *Reduce Municipal VMT*

GOALS:

Convert 100% of the City's Fleet to Electric Vehicles by 2030

Develop Guidelines for Sustainable Employee Commute and Business Travel

Strategy 3: *Promote Green Municipal Practices*

GOALS:

Prioritize Responsible Procurement

Utilize Digital and Remote Systems to reduce VMT

Strategy 4: *Integrate Climate Action and Adaptation into City Functions*

GOAL:

Incorporate Climate Action and Adaptation into City Policy, Budget, Planning, & Internal Standards

Green Community

Strategy 1: *Develop Nature-Based Solutions*

Goals:

Expand Green Infrastructure & Improve Water Resilience

Sequester All Remaining Carbon by 2035

Climate Risk

Strategy 1: *Understand and Reduce Physical Risk*

Goals:

Reduce Flood Risk

Reduce Heat Risk

Emergency Management

Strategy 1: *Integrate Adaptation Into Emergency Preparedness and Response*

Goals:

Ensure Safety During Extreme Heat

Ensure Safety During Wildfire and Unhealthy Air Events

Resilient Community

Strategy 1: *Educate and Protect Residents*

Goals:

Establish Resilience Hubs

Identify and Protect Vulnerable Community Members

Improve Climate Literacy and Risk Understanding"

Complete Streets Master Plan: An Active Transportation Framework (2022)

Reduce the number of Vehicle Miles Traveled (VMT) per capita to meet the goals of the City's Climate Action and Adaptation Plan.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Conservation Element

Air Quality

Goal 4: Improve Air Quality.

Policy 4.1: Support regional, state, and federal programs that improve air quality in the Bay Area.

Program 4.1 Encourage the use of alternative modes of transportation by maintaining and developing the Town's pathways system for bicyclists, pedestrians, and equestrians.

Program 4.2 Require all new fireplace inserts to comply with EPA-approved standards.

Program 4.3 Monitor construction and grading activities to control dust.

Climate Action Plan (2021)

The Climate Action Plan contains the following goal and measures.

Goal: Reduction in natural gas use through electrifying homes.

Battery Storage: Install storage to match PV production to Town Hall loads.

Town Hall Electrification: Convert the natural gas loads at town hall to electric.

V2G: Town Vehicle to Grid for resiliency pilot.

Green Fleet: Green Fleet Program with EV First commitment.

EV Charging: Free EV charging for town staff.

Renewable Diesel: Town Government and Fire District shift to renewable diesel.

Assessments: Town funded walkthrough electrification consultant low cost or free.

Streamline: Simplify city permitting processes and reduce fees for electrification conversions.

Financing: Join in promoting the BE smart program tariff on-bill financing to SVCE.

Incentives: Provide incentives & programs to eliminate natural gas use in buildings by 2045.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Environmental and Sustainability Element

ENV-9: Support Local and regional efforts in the Town's response to climate change.

Policy ENV 9.1: Reduce Town Contribution to GHG Emissions: Take action to achieve target reductions in GHG emission levels from operation of Town facilities and services to 40 percent below 1990 levels by 2030.

Policy ENV 9.2: Include Adaptation Measures in all Planning Documents: Require all planning documents to incorporate newly identified and revised adaptation measures consistently, including measures in the Hazards and Safety Element, the Sustainability Plan, and the Emergency Operation Plan.

Policy ENV 9.3: Support Climate Change Initiatives: Support initiatives, legislation, and actions to respond to climate change.

Policy ENV 9.4: Raise Climate Change Impacts Awareness: Collaborate with local organizations, such as health care providers, public health advocates, and fire prevention organizations, to raise awareness about climate change impacts and to disseminate public emergency preparedness and response information as it relates to climate change.

Policy ENV 9.5: Address Heat Island Effects: Encourage development to address “heat island” effects by including cool roofs, cool pavements, and strategically placed shade trees.

Policy ENV 9.6: Energy Conservation and Renewable Energy Use: Promote energy conservation in business and residential uses by encouraging

installation of fixture and appliance upgrades, installation of solar panels, and other retrofits to existing structures.

Policy ENV 9.7: Employer Incentive Programs: Support employer incentive programs for carpooling and the use of other forms of alternative transportation, as well as offering plant-based menu options.

Policy ENV 9.8: Local Employment Opportunities: Promote local employment opportunities to reduce consumption of fuel used for commuting.

Policy ENV 9.9: Carpool, Walk, Bike to School: Work with local school districts to encourage carpooling, walking, and biking to schools.

Policy ENV 9.10: Encourage and Incentivize Alternative Fuels: Support the use of non-polluting fuels by encouraging the inclusion of facilities for alternative fuels in new public and private developments and by offering incentives to encourage retrofits.

Policy ENV 9.11: Green Building: Foster awareness and encourage adoption of green building practices that include the design and development of environmentally responsible commercial and residential development and retrofits.

Policy ENV 9.12: Green Point Guidelines: Continue to require that all remodeled homes and new home construction comply with the adopted GreenPoint Guidelines to reduce GHG emissions reduction.

Policy ENV 9.13: Regional Green Building Programs: Coordinate with other local governments, special districts, nonprofits, and other public organizations to share resources, achieve economies of scale, and develop green building policies and programs that are optimized on a regional scale.

Policy ENV 9.14: Exceeding Title 24 for Large Developments: Require new residential developments with more than 20 dwelling units an acre and new or remodeled commercial, industrial, and office developments greater than 15,000 square feet to exceed the Title 24 requirements by 10 percent.

Policy ENV 9.15: Sustainability Plan Requirements: Continue to require that all new and remodeled developments incorporate sustainable building ENV 10.1 practices and site design methods as listed in the Sustainability Plan.

ENV-10: Become a zero-waste Town through encouraging sustainable procurement, extended producer responsibility, and innovative strategies.

Policy ENV 10.1: Move Toward Zero Waste: Encourage practices that take the Town closer to being a zero-waste municipality through:

- Limiting the amount of waste sent to landfills;
- Promote and implement programs that reduce packaging and microplastics that get into the environment.
- Promoting a reduce and reuse first approach to consumer waste; and
- Providing opportunities for composting, safe disposal of hazardous waste and bulky items,
- and other strategies, including enhancing construction and demolition debris recycling programs to increase diversion, where possible.

Policy ENV 10.2: Energy-Efficient Town Operations: Continue to encourage Town operations to pursue and model waste reduction and recycling methodologies in Town facilities for the community.

Policy ENV 10.3: Reusable/Recyclable Packaging: Encourage or, where feasible, require local businesses to use bags, packaging, and other materials that can be reused or recycled.

Policy ENV 10.4: Recycled-Content Construction Materials: Encourage the use of recycled-content construction materials in new construction that have low production energy costs for building materials, hard surfaces, and non-plant landscaping.

Policy ENV 10.5: Reuse and Rehabilitate Existing Buildings: Encourage reuse and rehabilitation of existing buildings when appropriate and feasible to reduce waste, and conserve resources and energy.

Policy ENV 10.6: Life-Cycle Costing: Incorporate a "life-cycle costing" approach into Town purchasing considerations that takes into account long-term cost savings from energy efficient products.

Policy ENV 10.7: Recycling Areas in Residential Developments: Require recycling and composting facilities in all new single-family and multi-family residential developments along with other waste-reduction resources.

Milpitas

Milpitas 2040 General Plan (2021)

Conservation and Sustainability Element

Goal CON-1: Ensure a sustainable future for the city of Milpitas by promoting a carbon free energy future that increases renewable resources, conservation, and efficiency throughout the city.

Policy CON 1-1: Ensure that new development is consistent with the energy objectives and targets identified by the City's Climate Action Plan (CAP).

Policy CON 1-2: Ensure all development projects comply with the mandatory energy efficiency requirements of the California Green Building Standards Code (CALGreen).

Policy CON 1-3: Support innovative green building best management practices including, but not limited to, LEED certification, and encourage project applicants to exceed the most current "green" development standards in the California Code of Regulations (CCR), Title 24, as feasible.

Policy CON 1-4: Require large-scale industrial and manufacturing energy users to implement an energy conservation plan as part of the project review and approval process.

Policy CON 1-5: Consider lifecycle costs when identifying opportunities for the replacement and retrofit of energy efficient technologies when upgrading or maintaining City facilities.

Policy CON 1-6: Reduce the City's energy demand by pursuing the use of alternative energy and fuel-efficient City vehicles and equipment and strive for a zero-emission City vehicle fleet to the extent feasible and practical.

Policy CON 1-7: Support the production of alternative and renewable energy fueling stations in Milpitas.

Policy CON 1-8: Encourage energy efficiency and conservation through public awareness and educational opportunities.

Policy CON 1-9: Encourage site planning and building techniques that promote energy conservation. Where feasible, encourage projects to take advantage of shade, prevailing winds, landscaping, sunscreens, building orientations, and material choices that reduce energy use.

Policy CON 1-11: Consider incentive programs such as reduced fees, and permit expedition for projects that exceed mandatory energy requirements, incorporate alternative energy technologies, or support the City's energy objectives.

Policy CON 1-12: Promote incentives from local, state, and federal agencies for improving energy efficiency and expanding renewable energy installations.

Policy CON 1-13: Support projects and programs such as appliance upgrades and the use of electric appliances, and energy storage options that reduce the use of and reliance on natural gas.

Goal SA-6: Minimize risk to life, property, the economy, and the environment through climate adaptation strategies that enhance and promote Milpitas' community resiliency

Policy SA 6-1: Consider climate change impacts and adaptive responses in long-term planning and current development decisions.

Policy SA 6-2: Ensure that emergency response plans and training programs continue to evolve and are modified in order to protect residents, infrastructure, and facilities during emergencies and extreme weather events.

Policy SA 6-3: Encourage and support private sector investment in climate adaptation through climate-resilient infrastructure such as onsite renewable energy, integrated stormwater management and water conservation.

Policy SA 6-4: Promote community awareness of climate-resilient actions that can be implemented by homeowners, such as water conservation, on-site water collection, passive solar designs, and alternative energy strategies.

Policy SA 6-5: Ensure that climate impacts and climate adaptation measures aimed at reducing climate risks do not lead to disproportionally adverse effects on vulnerable populations.

Policy SA 6-6: Consider the needs of vulnerable populations and individuals with limited mobility when planning for access to safe and comfortable shelter during extreme heat events or other severe weather events.

Policy SA 6-7: As feasible support and prioritize adaptation through natural/living measures (e.g., horizontal levees, wetland/marsh/habitat restoration, greenspaces, fire resistant landscaping etc.)

Policy SA 6-8: Participate in regional climate adaptation planning efforts. CON 1-10 Encourage distributed energy resources including solar, fuel cells etc. to provide environmental benefits, as well as energy security, and the support of the grid during peak energy use periods.

Climate Action Plan Update (2022)

Strategy TR-1: Facilitate Sustainable Transportation and Land Use Planning

Measure TR 1.1: Reduce VMT from new development in compliance with SB 743.

Measure TR 1.2: Reduce VMT from existing development.

Measure TR 1.3: Continue to implement and adopt policies that support high-density, mixed-use, and transit-oriented development and housing near jobs.

Measure TR 1.4: Explore car-free zones or shared streets in appropriate areas.

Strategy TR-2: Decarbonize Vehicles

Measure TR 2.1: Increase EV charging infrastructure.

Measure TR 2.2: Increase EV and low-carbon vehicle adoption.

Measure TR 2.3: Reduce vehicle idling.

Measure TR 2.4: Reduce the amount of parking such that it meets the needs of residents, workers, and visitors in a way that is consistent with the City's sustainability goals.

Strategy TR-3: Increase Active and Public Transportation Use.

Measure TR 3.1: Enhance and expand transit facilities and infrastructure.

Measure TR 3.2: Increase transit ridership.

Measure TR 3.3 Improve active transportation options.

Strategy SW-1 Achieve Zero Waste

Measure SW 1.1: Eliminate the disposal of organic solid waste in landfills.

Measure SW 1.2 Increase recycling and the diversion of other inorganic solid waste.

Measure SW 1.3 Reduce the generation of waste from residents and businesses.

Measure SW 1.4 Reduce the generation of construction and demolition waste.

Measure SW 1.5: Facilitate repair and reuse of consumer products.

Strategy OT-1: Shift to Clean Off-Road Equipment and Vehicles

Measure OT 1.1: Reduce landscaping-related emissions.

Measure OT 1.2: Reduce construction-related emissions.

Strategy WA-1 Promote resilient Water Supply, Water Use, and Water Resources.

Measure WA 1.1: Reduce indoor water consumption in buildings.

Measure WA 1.2: Reduce water consumption for irrigation and landscaping.

Measure WA 1.3: Increase the use of recycled water and support efforts to drought-proof our water supply.

Strategy CS-1: Resilient Infrastructure and Health Forest and Natural Systems.

Measure CS 1.1: Protect native trees and vegetation and enhance carbon sequestration.

Measure CS 1.2: Reduce the urban heat island effect to conserve energy.

Measure CS 1.3: Increase the use of green infrastructure.

Measure CS 1.4: Increase soil carbon content.

Measure CS 1.5: Use low-carbon and carbon sequestering construction materials in new development.

Strategy GE 1: Foster Green and Sustainable Economic Development opportunities.

Measure GE 1.1: Support and attract clean technology businesses and green jobs in Milpitas.

Measure GE 1.2: Incentivize and promote green business practices.

Strategy GE 2: Support Circular Economy Policies.

Measure GE 2.1: Engage with circular economy and zero waste policymaking at the Federal, State, and local levels.

Monte Sereno

Monte Sereno General Plan (2008)

Open Space and Conservation Element

Goal OSC-1: Reduce Greenhouse gas emissions by providing leadership in climate protection.

Policy OSC-1.1: Adopt a Climate Action Plan that establishes baseline greenhouse gas emissions, sets reduction targets relative to that baseline, and identifies strategies and implementation actions to achieve the reduction targets.

Policy OSC-1.2: Continue to participate in regional efforts to reduce Greenhouse gas emissions.

Policy OSC-1.3: Support a reduction in the city's peak electric load through increases in energy efficiency, conservation and shifting the timing of energy demands.

Policy OSC-1.4: Require all new construction of public buildings to be LEED certified.

Policy OSC-1.5: Encourage the use of green building practices and LEED certification in residential development.

Policy OSC-1.6: Require all new and remodeled homes to complete the green sustainability checklist.

Policy OSC-1.7: Consider solar access and orientation in the review of proposed residential development projects.

Policy OSC-1.8: Encourage the use of energy-efficient appliances in residences.

Policy OSC-1.9: When upgrading appliances or equipment in City buildings, require energy-efficient upgrades.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Natural Resources and Environment Element

GOAL NRE-15: An adaptive and resilient community that responds to climate change.

Policy NRE-15.1: Greenhouse Gas Emission Reduction Targets. Maintain a greenhouse gas reduction trajectory that is consistent with the greenhouse gas reduction targets of Executive Orders B-30-15 (40 percent below 1990 levels by 2030) and S-03-05 (80 percent below 1990 levels by 2050) to ensure the City is consistent with statewide efforts to reduce greenhouse gas emissions.

Policy NRE-15.2: Linking Land Use and Transportation. Encourage land use and transportation patterns that reduce dependence on automobiles.

Policy NRE-15.3: Climate Action Plan. Utilize policies in this General Plan denoted with the green leaf symbol as the City's greenhouse gas emissions reduction strategy.

Policy NRE-15.4: Sustainable Land Use. Promote land use patterns that reduce the number and length of motor vehicle trips.

Policy NRE-15.5: Jobs Housing Balance. To the extent feasible, encourage a balance and match between jobs and housing.

Policy NRE-15.6: Residential Near Transit. Encourage higher density residential and mixed-use development adjacent to commercial centers and transit corridors – the land along or within walking distance of a street served by transit.

Policy NRE-15.7: Mix of Uses in Employment Centers. Encourage employment areas to include a mix of support services to minimize the number of employee trips.

Policy NRE-15.8: Walkable City. Encourage retail and office areas to be located within walking and biking distance of existing and proposed residential developments.

Policy NRE-15.9: Urban Forest. Support development and maintenance of a healthy, vibrant urban forest through outreach, incentives, and strategic leadership.

Policy NRE-15.10: VMT Reduction. Continue to work with the Santa Clara Valley Transportation Authority on regional transportation solutions that will reduce vehicle miles traveled and greenhouse gas emissions.

Policy NRE-15.11: Green Building. Promote green building practices in new development.

Policy NRE-15.12: Municipal Fleet Alternative Fuel Vehicles. Shift municipal vehicle fleet from gasoline and diesel-powered vehicles to alternative fueled vehicles, to the extent possible.

Action NRE-15. A: Long-term GHG Reduction Monitoring. Regularly monitor progress made towards the City's 2035 and additional future targets through inventory updates and review of implementation success related to statewide actions.

Climate Action Plan (2021)

Main Goal:

Reduce Morgan Hill's net CO2 emissions in the building and transportation sectors 35% below the 2020 baseline level by 2030 and 100% below the 2020 baseline level by 2045.

Subgoals for Transportation Sector

5. Expand electric vehicle charging station access for existing multifamily complexes by 30%, (i.e., the number of chargers in multifamily complexes will be equivalent to at least 30% of the number of units in multifamily complexes) by the year 2025 and 100% by 2035.

6. Transition 50% of the municipal fleet from fossil fuel to electric by 2030 and 100% by 2035.

7. Prohibit the construction of new gas stations in Morgan Hill.

8. Require newly constructed residential buildings to have the necessary capacity to facilitate EV charging.

9. Install EV charging stations for at least 10% of available parking spaces in new non-residential projects.

Subgoals for Building Sector

2. Transition 95% of existing buildings (roughly 14,000) in Morgan Hill to be all-electric by 2045, with additional targets every five years consisting of:

    - 1% of existing buildings by 2025
    - 10% of existing buildings by 2030
    - 35% of existing buildings by 2035

- 70% of existing buildings by 2040

2. Convert all municipal buildings to all-electric by 2035.

Mountain View

Mountain View 2030 General Plan (2012)

Mobility Element

Goal MOB-9: Achievement of state and regional air quality and greenhouse gas emission reduction targets.

Policy MOB 9.1: Greenhouse gas emissions. Develop cost-effective strategies for reducing greenhouse gas emissions in coordination with the Greenhouse Gas Reduction Program.

Policy MOB 9.2: Reduced vehicle miles traveled. Support development and transportation improvements that help reduce greenhouse gas emissions by reducing per capita vehicle miles traveled.

Policy MOB 9.3: Low-emission vehicles. Promote use of fuel-efficient, alternative fuel and low-emission vehicles.

Goal INC-12: Environmental stewardship that recognizes the importance of addressing climate change and community commitment to sustainability.

Policy INC 12.1: Emissions reduction target. Maintain a greenhouse gas emissions reduction target.

Policy INC 12.2: Emissions reduction strategies. Develop cost-effective strategies for reducing greenhouse gas emissions.

Policy INC 12.3: Adaptation strategies. Develop strategies for adapting to climate change in partnership with local and regional agencies.

Climate Protection Roadmap (2015)

The Climate Protection Roadmap contains the following strategies and mechanisms.

Strategy A): Lower-Carbon Electricity

Mechanism A.1. Community Choice Energy Policy

Mechanism A.2. Large-Scale Renewable Electricity Generation

Strategy B) Renewable Energy Generation – Solar Photovoltaic

Mechanism B.1. Mandatory Solar Photovoltaic Requirements for New Construction

Mechanism B.2. Solar Power Districts Policy and Program

Strategy C) Renewable Energy Generation – Solar Hot Water

Mechanism C.1. Solar Hot Water Campaign

Mechanism C.2. Mandatory Solar Hot Water Policy

Strategy D) Fuel Switching – Heating and Hot Water: From Natural Gas to Electric Heat Pumps

Mechanism D.1. Heat Pump Promotional Campaign

Mechanism D.2. Heat Pump Permit Streamlining

Mechanism D.3. Mandatory Electric Heat Pump Policy

Strategy E) Energy Efficiency – Existing Buildings

Mechanism E.1. Advanced Energy-Use Analytics Promotion

Mechanism E.2. Energy-Management Systems Promotion

Mechanism E.3. Commercial District Partnerships

Mechanism E.4. Building Benchmarking and Disclosure Policy

Mechanism E.5. Point-of-Sale Energy Rating Policy

Mechanism E.6. Building Commissioning Promotion

Mechanism E.7. Mandatory Retro-Commissioning Policy

Strategy F) Energy Efficiency – New Construction

Mechanism F.1. Zero-Energy Building Code

Mechanism F.2. Passive Home Energy Design Policy

Mechanism F.3. Energy -Efficient Appliance Policy

Strategy G) Business Green Upgrades *

Mechanism G.1. Business Green Upgrades Promotion

Strategy H) PACE Programs *

Mechanism H.1. PACE Programs Evaluation/Adoption

Strategy I) Community Outreach *

Mechanism I.1. Community Outreach and Assistance

Strategy A) Fuel Switching – Compressed Natural Gas (CNG)

Mechanism A.1. Publicly Accessible CNG Fueling Stations

Mechanism A.2. Shared Commercial CNG Fueling Station Outreach Program

Strategy B) Fuel Switching – Electric Vehicles (EV)

Mechanism B.1. Community EV Adoption Campaign

Mechanism B.2. Publicly-Accessible EV Charging Facilities

Mechanism B.3. Parking Facility EV Charging Standards

Mechanism B.4. Residential Multi-Family EV Charging Standards

Mechanism B.5. Residential Single-Family E V Charging Standards

Strategy C) Fuel Switching – Second Generation Biofuels

Mechanism C.1. Encourage Development of Biofuel Stations

Mechanism C.2. Waste-To-Biogas Facility for Fleet Vehicles

Strategy D) Hydrogen Fuel *

Mechanism D.1. Hydrogen Fuel Exploration

Strategy E) Transportation Policies *

Mechanism E.1. Regional Transportation Policies

Strategy F) Community Outreach *

Mechanism F.1. Community Outreach and Assistance

Strategy A) Reduce Landfilled Waste

Mechanism A.1. Target Materials for Diversion

Mechanism A.2. Promote Waste Reduction and Material Re-Use

Mechanism A.3. Explore Future Processing Technologies"

Sustainability Action Plan 4 (2019)

The Sustinability Action Plan 4 contains the following actions.

Transportation

Action T1. Develop comprehensive, multi-modal transportation plans and strategies to decarbonize the sector.

Action T7. Accelerate the electrification of vehicles.

Action T8. Reduce GHG emissions from City-owned fleet vehicles and equipment.

Action T9. Reduce GHG emissions associated with City employee commutes.

Buildings and Energy

Action B1. Reduce GHG emissions from energy use in new buildings.

Action B2. Reduce GHG emissions from energy use in existing buildings.

Action B3. Decarbonize the energy supply.

Action B4. Decarbonize and improve the efficiency of City facilities.

Land Use

Action L1. Develop land use strategies and policies that support VMT reduction.

Water

Action W1. Reduce potable water use through efficiency and conservation measures.

Action W2. Increase the use of alternative water sources for non-potable uses.

Core Sustainability Programs and Governance

Action S2. Improve GHG management and accounting.

Carbon Neutrality Resolution (2020)

In April 2020, the City Council passed a resolution for Mountain View to become a carbon neutral city by 2045. This means that in addition to achieving the adopted 2045 greenhouse gas (GHG) reduction target of 75% below 2005 levels, Mountain View has committed to balancing any remaining GHG emissions with carbon sequestration projects (such as planting trees or restoring wetlands) and/or carbon offsets.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Natural Environment Element

GOAL N-8: Actively support regional efforts to reduce our contribution to climate change while adapting to the effects of climate change on land uses and city services.

Policy N-8.1: Take action to achieve target reductions in greenhouse gas emission levels from City operations and the community activity of 80 percent below 1990 levels by 2030.

Policy N-8.2: With guidance from the City's Sustainability and Climate Action Plan (S/CAP) and its subsequent updates and other future planning efforts, reduce greenhouse gas emissions from City operations and from the community.

Policy N-8.3: Prioritize infrastructure improvements that address adaptation of critical facilities to climate change in the Capital Improvement Program (CIP) five-year plan.

Policy N-8.4: Continue to work with regional partners to build resiliency policy into City planning and capital projects, especially near the San Francisco Bay shoreline, while protecting the natural environment.

Sustainability and Climate Action Plan (2022)

Goals:

- Reduce GHG emissions 80% below 1990 levels by 2030.
- Reduce GHG emissions from the direct use of natural gas in Palo Alto's building sector by at least 60% below 1990 levels (116,400 MT CO2e reduction)
- Modernize the electric grid to support increased electric demand and to accommodate.
- State-of-the-art technology
- Reduce transportation related GHG emissions at least 65% below 1990 levels (215,696 MT CO2e reduction)
- Develop a public and private charging network to support EV adoption
- Reduce total vehicle miles traveled 12% by 2030, compared to a 2019 baseline, by reducing commute vehicle miles traveled 20%, visitor vehicles miles traveled 10%, and resident vehicle miles traveled 6%.
- Increase the mode share for active transportation (walking, biking) and transit from 19% to 40% of local work trips by 2030.
- Reduce Palo Alto's potable water consumption 30% compared to a 1990 baseline (subject to refinement based on forthcoming California water efficiency standards expected in 2024)
- Develop a water supply portfolio which is resilient to droughts, changes in climate, and water demand and regulations, that supports our urban canopy.

- Develop and adopt a multi-year Sea Level Rise Adaptation Plan including a Sea Level Rise
- Vulnerability Assessment and adaptation plan
- Minimize wildland fire hazards by ensuring adequate provisions for vegetation management, emergency access and communications, inter-agency firefighting, and standards for design and development within wildland areas.
- Restore and enhance resilience and biodiversity of our natural environment throughout the City.
- Increase tree canopy to 40% city-wide coverage by 2030.
- By 2030, achieve a 10% increase in land area that uses green stormwater infrastructure to treat urban water runoff, compared to a 2020 baseline.
- Divert 95% of waste from landfills by 2030, leading to zero waste.
- Implement short- and medium-term initiatives identified in the 2018 Zero Waste Plan.

San José

Envision San José 2040 General Plan (2011)

The Envision San José 2040 General Plan (2011) contains the following policies/actions relevant to GHG emissions:

Goal MS-10: Minimize air pollutant emissions from new and existing development.

Policy MS-10.1: Assess projected air emissions from new development in conformance with BAAQMD CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.

Action MS-10.14: Review and evaluate the effectiveness of site design measures, transit incentives, and new transportation technologies and encourage those that most successfully reduce air pollutant emissions.

Action MS-11.8: For new projects that generate truck traffic, require signage which reminds drivers that the State truck idling law limits truck idling to five minutes.

Goal MS-14: Reduce Consumption and Increase Efficiency: Reduce per capita energy consumption by at least 50% compared to 2008 levels by 2022 and maintain or reduce net aggregate energy consumption levels equivalent to the 2022 (Green Vision) level through 2040.

Policy MS-14.3: Consistent with the California Public Utilities Commission's California Long Term Energy Efficiency Strategic Plan, as revised, and when technological advances make it feasible, require all new residential and commercial construction to be designed for zero net energy use.

Policy MS-14.4: Implement the City's Green Building Policies so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design, and planting of trees and other landscape materials to reduce energy consumption

Implementation Chapter

Goal IP-3: General Plan Annual Review and Measurable Sustainability Evaluate the progress of the Envision General Plan's implementation actions and programs, and the Green House Gas (GHG) reduction strategies using its Performance Measures and the Council's Climate Action/Green House Gas Reduction Policy and, as needed, refine Envision General Plan goals and policies and the Land Use / Transportation Diagram during Annual Review.

2030 Greenhouse Gas Reduction Strategy (2020)

Strategy GHGRS 1: San José Clean Energy. The City will implement the San José Clean Energy program to provide residents and businesses access to cleaner energy at competitive rates.

Strategy GHGRS 2: Zero Net Carbon – Residential Construction. The City will implement its building reach code ordinance (adopted September 2019) and its prohibition of natural gas infrastructure ordinance (adopted October 2019) to guide the city's new construction toward zero net carbon (ZNC) buildings.

Strategy GHGRS 3: Renewable Energy Development. The City will expand development of rooftop solar energy through the provision of technical assistance and supportive financial incentives to make progress toward the Climate Smart San José goal of becoming a one-gigawatt solar city.

Strategy GHGRS 4: Building Retrofits – Natural Gas. The City will support a transition to building decarbonization through increased efficiency improvements in the existing building stock and reduced use of natural gas appliances and equipment.

Strategy GHGRS 5: Zero Waste Goal. As an expansion to Climate Smart San José, the City will update its Zero Waste Strategic Plan and reassess zero waste strategies. Throughout the development of the update, the City will continue to divert 90 percent of waste away from landfills through source reduction, recycling, food recovery and composting, and other strategies.

Strategy GHGRS 6: Caltrain Modernization Project. The City will continue to be a partner in the Caltrain Modernization Project to enhance local transit opportunities while simultaneously improving the city's air quality.

Strategy GHGRS 7: Water Conservation. The City will expand its water conservation efforts to achieve and sustain long-term per capita reductions that ensure a reliable water supply with a changing climate, through regional partnerships, sustainable landscape designs, green infrastructure, and water-efficient technology and systems. "

Climate Smart San José

Climate Smart San José was adopted by the San José City Council in 2018 and is the City's overarching visionary plan to reduce emissions geared toward the Paris Agreement. Climate Smart San José serves as a roadmap to deep carbon reductions aligned with the State's GHG targets set by AB 32, SB 32, and EO S-3-05, as well as the decarbonization goals of the Paris Agreement, while supporting 40 percent growth in the city's population by 2050 and continued economic growth. It employs a people-centered approach, encouraging the entire San José community to join an ambitious campaign to reduce GHG emissions, save water, and improve the community's quality of life, while also promoting economic growth (City of San José 2018). In November 2021, the City Council set a goal of community-wide carbon neutrality by 2030 thereby accelerating Climate Smart. The proposed Pathway to Carbon Neutrality by 2030 was heard by City Council on June 14, 2022, which contains four strategies to achieve carbon neutrality by 2030: move to zero-emission vehicles, reduce the miles travelled in vehicles by at least 20 percent, switch appliances from fossil fuels to electric, and power the community with 100 percent carbon-neutral electricity (City of San José 2022).

Santa Clara

City of Santa Clara 2010-2025 General Plan (2010)

Goals and Policies

Energy Goals

Goal 5.10.3-G1: Energy supply and distribution maximizes the use of renewable resources.

Goal 5.10.3-G2: Implementation of energy conservation measures to reduce consumption.

Goal 5.10.3-G3: Adequate energy service to residents, businesses, and municipal operations.

Energy Policies

Policy 5.10.3-P1: Promote the use of renewable energy resources, conservation and recycling programs.

Policy 5.10.3-P3: Maximize the efficient use of energy throughout the community by achieving adopted electricity efficiency targets and promoting natural gas efficiency, consistent with the CAP.

Policy 5.10.3-P5: Reduce energy consumption through sustainable construction practices, materials and recycling.

Climate Action Plan (2022)

Achieving our long-term goal of carbon neutrality no later than 2045.

Strategy B1: Shift to electric fuels in new and existing buildings to achieve net-zero carbon buildings.

Strategy B2: Improve energy efficiency.

Strategy B3: Maximize renewable energy generation and storage capacity.

Strategy T1: Transition vehicles to electric alternatives.

Strategy T2: Expand clean mobility options and use of non-SOV transportation modes.

Strategy T3: Advance sustainable land use.

Strategy M1: Increase waste diversion.

Strategy M2: Reduce landfilled food waste.

Strategy M3: Enhance sustainable production and consumption.

Strategy N1: Increase tree canopy cover.

Strategy N2: Enhance ecosystem resilience.

Strategy N3: Improve water supply and conservation.

Strategy C1: Improve community resilience.

Strategy C2: Prepare for climate change.

Saratoga

There are no relevant local laws or policies for the City of Saratoga.

Sunnyvale

Climate Action Playbook 2028 (2024)

Strategy 1: Promoting 100% Clean Electricity

Play 1.A: Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing electricity from a mix of carbon-free and eligible renewable sources and decarbonization programs to the Sunnyvale community.

Play 1.B : Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.

Play 1.E: Collaborate with SVCE to evaluate opportunities for energy storage to maximize utilization of local solar supply and to enhance resiliency.

Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Play 3.A: Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.

Play 3.B: Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.

Play 3.C: Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.

Play 3.D: Implement Active Transportation Plan (ATP) to achieve a connected, safe and active network.

Play 3.E: Continue to evaluate the potential for the shared bicycle and scooter pilot program as a permanent program.

Play 3.F: Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.

Play 3.G: Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.

Play 3.H: Create a TDM program for City staff to promote alternative transportation modes and carpooling to the greatest extent possible.

Play 3.I: Establish and implement a plan to convert vehicle roadways to bicycle and pedestrian space to increase opportunities for active transportation in the community.

Play 3.L: Continue implementing the Drive Electric Program and providing resources to assist and encourage community adoption of EVs.

Play 3.M: Electrify the Municipal Fleet as existing vehicles need replacement and install EV infrastructure (EVI) at municipal properties to support the electric fleet.

Play 3.P: Create a phased ordinance by 2026 to ban local operation of gasoline and diesel-powered off-road equipment by type, including banning local operation of gasoline and diesel-powered small off-road equipment (SORE) by 2028.

Strategy 4: Managing Resources Sustainably

Play 4.A: Implement campaign for waste reduction.

Play 4.C: Comply with SB 1383 requirements to help the state reduce organic waste disposal 75% by 2025.

Play 4.D: Expand the City's edible food recovery efforts to edible food generators beyond those required by SB 1383.

Play 4.E: Continue to implement the mandatory waste diversion ordinance requiring all residents, visitors and businesses to place their discards in the appropriate container (i.e., recycle, food scraps or garbage).

Play 4.M: Implement the City's Urban Forest Management Plan and continue to protect and greatly expand tree canopy.

Play 4.N: Implement the City's Green Stormwater Infrastructure Plan.

Strategy 5: Empowering Our Community

Play 5.A: Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.

Play 5.B: Create a stronger social media and web presence for Sunnyvale climate action.

Play 5.C: Implement the Sustainability Speaker Series.

Play 5.D: Cultivate relationship between City and youth groups to engage students on climate, building on current engagement with school classrooms and green teams.

Play 5.E: Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.

Play 5.F: Create demonstration projects within City operations to educate the community on ways to reduce emissions.

Play 5.G: Continue to develop and implement educational programs at the Sunnyvale Public Library that focus on environmental and sustainability topics.

Play 5.H: Continue reporting climate action data for the public.

Play 5.I: Publish annual GHG inventory.

Strategy 6: Adapting to a Changing Climate

Play 6.A: Participate in regional forums on climate vulnerability and adaptation.

Play 6.B: Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.

Play 6.D: Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.

Play 6.E: Develop a community resiliency plan.

Play 6.F: Implement a Resilience Hub Initiative.

Hazards and Hazardous Materials

Santa Clara County

Santa Clara County General Plan (1994)

Resource Conservation Chapter

Water Quality and Watershed Management

Policy C-RC 20: Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:

a. erosion and sedimentation;

b. organic matter and wastes;

c. pesticides and herbicides;

g. industrial wastewater discharges;

h. hazardous wastes

Health and Safety Chapter

Hazardous Materials

Strategy #1: Manage Hazardous Materials Safely and Efficiently

Policy C-HS 14: All feasible measures to safely and effectively manage hazardous materials and site hazardous materials treatment facilities should be used, including complying with all federal and state mandates.

Emergency Preparedness

Strategy #1: Plan for Immediate Disaster Response

Policy C-HS 19: The County and cities should comply with federal and state hazardous materials regulations and planning activities, including, the Countywide Hazardous Waste Management Plan, the Hazardous Materials Area Plan, and the Operations Section of the County Emergency Plan regarding a hazardous materials incident.

Natural Hazards

Strategy #4: Reduce the Magnitude of the Hazard, If Feasible

Policy C-HS 34: Flood control measures should be considered part of an overall community improvement program and advance the following goals, in addition to flood control:

a. resource conservation;

b. preservation of riparian vegetation and habitat;

c. recreation; and

d. scenic preservation of the County's streams and creeks

Santa Clara County Emergency Operations Plan (2022)

The Santa Clara County Emergency Operations Plan (EOP) is a comprehensive all-hazards document that provides guidance and procedures for the County to prepare and respond to significant natural and human-caused threats. The EOP does not address specific emergency response scenarios; however, it outlines specific response activities for response organizations to conduct during emergencies.

Campbell

Envision Campbell General Plan Update 2040 (2023)

<u>Emergency Services</u>

Goal SA-4: Maintain a safe community through adequate, efficient, and high-quality police, fire, and emergency services

<u>Safety Element</u>

Goal SA-3: Protect the safety of life and property throughout the community by ensuring emergency preparedness.

Goal SA-5: Protect citizens from hazardous materials.

Policy SA-5.1: Minimize the use of toxic cleaning supplies and products in civic facilities, and minimize the City's use of pesticides, herbicides, and fertilizers during landscaping and outdoor municipal operations.

Policy SA-5.3: Strive to reduce or eliminate private aerial spraying of pesticides throughout the city.

Policy SA-5.4: Encourage local producers and users of hazardous materials to reduce the amounts of hazardous materials generated.

Policy SA-5.5: Require hazardous waste generated within Campbell to be disposed of in a safe manner, consistent with all applicable local, State, and Federal laws.

Policy SA-5.6: Require hazardous materials to be stored in a safe manner, consistent with all applicable local, State, and Federal laws.

Action SA-5.c: Continue to work cooperatively with the Santa Clara County Fire Department (SCCFD) to train local fire personnel in the specialized handling and cleanup procedures that are required for radioactive, toxic, and hazardous substance spills.

Policy SA-5.8: Require compliance with the Santa Clara County Hazardous Waste Management Plan.

Goal SA-6: Protect citizens from emerging community hazards.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Health and Safety Element

Goal HS-1: Reduce hazard risks through regional coordination and mitigation planning.

Policy 6-28: Hazardous Materials Storage and Disposal. Require the proper storage and disposal of hazardous materials to prevent leakage, potential explosions, fire, or the release of harmful fumes.

Goal HS-2: Ensure a high level of emergency preparedness for natural and human-causes disasters.

Policy HS-3.3: Emergency Access. Ensure adequate emergency access is provided for all new hillside development.

Goal HS-6: Protect people and property from the risks associated with hazardous materials and exposure to electromagnetic fields.

Policy HS-6.1: Hazardous Materials Storage and Disposal. Require the proper storage and disposal of hazardous materials to prevent leakage,

potential explosions, fire, or the release of harmful fumes. Maintain information channels to the residential and business communities about the illegality and danger of dumping hazardous material and waste in the storm drain system or in creeks.

Gilroy

City of Gilroy 2040 General Plan (2020)

Potential Hazards Element

Goal PH 5: Protect people and environmental resources from contaminated hazardous material sites and minimize risks associated with the use, storage, transport, and disposal of hazardous materials.

Goal PH 5.1: Hazardous Waste Reduction. Minimize the potential hazards posed by the storage and transport of hazardous materials and waste by encouraging source reduction and waste minimization.

Goal PH 5.4: Hazardous Materials Storage Ordinance. Continue to regularly inspect activities that store and/or use hazardous materials, including above ground and underground storage tanks and related equipment, to ensure compliance with the City's Hazardous Materials Storage Ordinance.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Natural Environment and Hazards Element

Goal 3: Protect the community's health, safety, welfare, natural resources, and property through regulation of use, storage, transport, and disposal of hazardous materials.

Policy 3.2: Support the management of hazardous materials contamination and abatement by public and private agencies.

Goal 4: Minimize the risk of hazards to Los Altos residents.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update 2007 (2007)

Safety Element

Goal 6: Reduce dangers from hazardous materials.

Policy 6.1: Facilitate the proper disposal of hazardous waste.

Goal 7: Provide quick, coordinated response to emergencies.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Hazards and Safety Element

Goal HAZ-1: Ensure the community is prepared for health, natural, and human-caused hazards and can respond quickly and effectively.

Goal HAZ-7: Reduce the potential for injuries, damage to property, economic and social displacement, and loss of life resulting from hazardous materials.

Goal HAZ-7.3: Hazardous Materials Storage Monitoring. Support Santa Clara County Fire Department in monitoring the storage of hazardous materials.

Milpitas

Milpitas 2040 General Plan (2021)

Safety Element

Goal SA-3: Enhance safety throughout the community by ensuring emergency preparedness.

Goal SA-5: Protect citizens from hazardous materials.

Policy SA- 5-1: Require hazardous waste generated within Milpitas to be disposed of in a safe manner, consistent with all applicable local, state, and federal laws.

Policy SA-5-2: Hazardous materials shall be stored in a safe manner, consistent with all applicable local, state, and federal laws.

Monte Sereno

Monte Sereno General Plan (2008

Safety Element

Goal 6: Reduce dangers from hazardous materials.

Policy 6.1: Facilitate the proper disposal of hazardous waste.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Safety, Services, and Infrastructure Element

Goal SSI-1: Development that avoids or minimizes risks from environmental hazards.

Goal SSI-4: Avoidance of exposure to hazardous substances.

Policy SSI-4.5: Storage and Usage. Regularly inspect activities that store and/or use hazardous materials, including above ground and underground storage tanks and related equipment, to ensure compliance with the City's Hazardous Materials Storage Ordinance (HMSO). (South County Joint Area Plan 9.02).

Policy SSI-4.7: Handling. Require submittal of a hazardous materials handling plan as a prerequisite for developments requiring zone changes and use permits. (South County Joint Area Plan 9.04)

Policy SSI-4.9: Leaking Equipment. Require Vehicles and other equipment that may threaten the quality of water from leaking fuel tanks or oil spills to be removed from the site and/or repaired. (South County Joint Area Plan 9.07)

Policy SSI-4.11: Transportation Monitoring. Monitor the transportation of hazardous materials and wastes to reduce risks and ensure notification of South County jurisdictions in the event of a leak or spill. (South County Joint Area Plan 9.10)

Policy SSI-4.b: Transportation Routes. Designate specific transportation routes for the conveyance of hazardous materials and waste, if the City desires hazardous materials and waste to be transported on routes other than designated truck routes. (South County Joint Area Plan 9.13)

Action SSI-4.C: Multijurisdictional Notification. If a spill occurs while transporting hazardous materials or waste in one of the South County cities or the county, immediately notify the other jurisdictions. (South County Joint Area Plan 9.12)

Goal SSI-12: Reduce risk to life and property associated with emergencies and natural and manmade disasters.

Mountain View

Mountain View 2030 General Plan (2012)

Public Safety Chapter

Fire and Hazardous Materials

Goal PSA-3: A community protected from fire, hazardous materials and environmental contamination.

Policy PSA 3.2: Protection from hazardous materials. Prevent injuries and environmental contamination due to the uncontrolled release of hazardous materials through prevention and enforcement of fire and life safety codes.

Policy PSA 3.4: Oversight agencies. Work with local, state and federal oversight agencies to encourage remediation of contamination and protection of public and environmental health and safety.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2022)

Safety Element

Human-Caused Threats

Goal S-3: An environment free of the damaging effects of human-caused threats and hazardous materials.

Policy S-3.1: Minimize the use of toxic and hazardous materials in Palo Alto. Promote the use of alternative materials and practices that are environmentally benign.

Program S3.13: Strengthen development review requirements and construction standards for projects on sites with groundwater contamination.

Policy S-3.3: Support public health by requiring as part of development review, property owners and private entities to disclose the presence of contaminated soil or groundwater, identify potential health impacts, prevent vapor intrusion, and remediate contamination.

Policy S-3.4: Support public agency policies, regulations, legislation, and programs that implement Santa Clara County's Hazardous Materials Management Program.

San José

Envision San José 2040 General Plan (Adopted 2011; Amended 2024)

Environmental Leadership Element

Environmental Considerations/ Hazards

Goal EC-6: Protect the community from the risks inherent in the transport, distribution, use, storage, and disposal of hazardous materials.

Policy EC-6.1: Require all users and producers of hazardous materials and wastes to clearly identify and inventory the hazardous materials that they store, use or transport in conformance with local, state and federal laws, regulations and guidelines.

Policy EC-6.2: Require proper storage and use of hazardous materials and wastes to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of

disposal by businesses and residences. Require proper disposal of hazardous materials and wastes at licensed facilities.

Goal EC-7: Environmental Contamination. Protect the community and environment from exposure to hazardous soil, soil vapor, groundwater, and indoor air contamination and hazardous building materials in existing and proposed structures and developments and on public properties, such as parks and trails.

Policy EC-7.5: On development and redevelopment sites, require all sources of imported fill to have adequate documentation that it is clean and free of contamination and/or acceptable for the proposed land use considering appropriate environmental screening levels for contaminants. Disposal of groundwater from excavations on construction sites shall comply with local, regional, and state requirements.

Policy EC-7.8: Where an environmental review process identifies the presence of hazardous materials on a proposed development site, the City will ensure that feasible mitigation measures that will satisfactorily reduce impacts to human health and safety and to the environment are required of or incorporated into the projects. This applies to hazardous materials found in the soil, groundwater, soil vapor, or in existing structures.

Policy EC-7.10: Require review and approval of grading, erosion control and dust control plans prior to issuance of a grading permit by the Director of Public Works on sites with known soil contamination. Construction operations shall be conducted to limit the creation and dispersion of dust and sediment runoff.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

Safety Policies

Policy 5.10.5-P22: Regulate development on sites with known or suspected contamination of soil and/or groundwater to ensure that construction workers, the public, future occupants and the environment are adequately protected from hazards associated with contamination, in accordance with applicable regulations.

Policy 5.10.5-P23: Require appropriate clean-up and remediation of contaminated sites.

Policy 5.10.5-P24: Protect City residents from the risks inherent in the transport, distribution, use, and storage of hazardous materials.

Policy 5.10-5-P25: Use Best Management Practices to control the transport of hazardous substances and to identify appropriate haul routes to minimize community exposure to potential hazards.

Saratoga

City of Saratoga 2040 General Plan (2010)

Safety Element

Goal SAF-5: A community that promotes a culture of preparedness and is ready to respond to future natural and human caused hazard events.

Policy SAF-5.1: Ensure the City's emergency preparedness efforts and resources are prioritized to better protect residents and businesses.

Policy SAF-5.2: Coordinate emergency management planning with local jurisdictions and regional agencies to anticipate cumulative impacts during times of disaster.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Safety Element

Policy SN-1.6: Promote a living and working environment safe from exposure to hazardous materials. Policy

Policy SN-1.8: Operate a response system that will provide effective control and investigation of hazardous materials emergencies.

Hydrology and Geomorphology

Santa Clara County

Santa Clara County General Plan

Resource Conservation Chapter

Water Supply Resources

Policy C-RC 6: A comprehensive strategy for meeting long term projected demand for water should at a minimum include the following:

a. Continued conservation and increased reclamation;

b. Securing additional sources as supplemental supply;

c. System and local storage capacity improvements; and

d. Drought contingency planning and groundwater basin management programs.

Strategy #1: Conserve and Reclaim Water

Policy C-RC 13: Use of reclaimed wastewater for landscaping and other uses, including groundwater recharge if adequately treated, should be encouraged and developed to the maximum extent possible.

Strategy #4: Maintain Drought Contingency and Groundwater Basin Management Plans

Policy C-RC 17: Drought contingency plans and groundwater basin management programs should be reviewed and updated to prepare for the likelihood of future periods of short-term drought and to minimize:

a. the potential adverse impacts of drought upon households, business, and industry, and

b. the possibility of groundwater overdraft and land subsidence.

Policy C-RC 19: The strategies for maintaining and improving water quality on a countywide basis, in addition to ongoing point source regulation, should include:

a. effective non-point source pollution control;

b. restoration of wetlands, riparian areas, and other habitats which serve to improve Bay water quality; and

c. comprehensive Watershed Management Plans and "best management practices" (BMPs).

Policy C-RC 20: Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:

a. erosion and sedimentation;

b. organic matter and wastes;

c. pesticides and herbicides;

d. effluent from inadequately functioning septic systems;

e. effluent from municipal wastewater treatment plants;

f. chemicals used in industrial and commercial activities and processes;

g. industrial wastewater discharges;

h. hazardous wastes; and

i. non-point source pollution.

Policy C-RC-22: Countywide, compliance should be achieved with the requirements of the National Pollution Discharge Elimination System (NPDES) permit for discharges into S.F. Bay, and to that end, the Countywide Nonpoint Source Pollution Control Program should receive the full support and participation of each member jurisdiction

Policy R-RC-13: Sedimentation and erosion shall be minimized through controls over development, including grading, quarrying, vegetation removal, road and bridge construction, and other uses which pose such a threat to water quality.

Policy R-RC 35: Flood control modifications to be made in streams that have substantial existing natural areas should employ flood control designs which enhance riparian resources and avoid to the maximum extent possible significant alteration of the stream, its hydrology, and its environs.

Safety and Noise Chapter

Natural Hazards

Strategy #4: Reduce the Magnitude of the Hazard, If Feasible

Policy C-HS 34: Flood control measures should be considered part of an overall community improvement program and advance the following goals, in addition to flood control:

a. resource conservation;

b. preservation of riparian vegetation and habitat;

c. recreation; and

d. scenic preservation of the county's streams and creeks.

Policy R-HS 19: In areas of high potential for activation of landslides, there shall be no avoidable alteration of the land or hydrology which is likely to increase the hazard potential, including:

a. saturation due to drainage or septic systems;

b. removal of vegetative cover; and

c. steepening of slopes or undercutting the base of a slope.

Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) (2024)

The Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) for Santa Clara County is designed to enhance the region's resilience to various hazards, including floods, earthquakes, wildfires,

and other natural disasters. The plan brings together multiple jurisdictions to collaboratively assess risks and vulnerabilities within the county. It includes a comprehensive risk assessment that identifies potential hazards and their impacts on the community. The MJHMP outlines mitigation strategies, such as infrastructure improvements, land-use planning, and public education initiatives, aimed at reducing risks. Additionally, the plan emphasizes community engagement and collaboration among local governments, agencies, and residents to effectively implement these measures. Overall, the MJHMP serves as a proactive approach to minimize future disaster impacts and promote safer, more resilient communities throughout Santa Clara County.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Conservation and Open Space Chapter

Policy COS-8.8: Encourage all public and private landscaping in new development and renovation projects to be designed to reduce water demand, prevent runoff, decrease flooding, and recharge groundwater through the installation of LID measures, irrigation systems, the selection of appropriate plant material, and proper soil preparation.

Policy COS-8.9: Maintain and enhance the health of the groundwater basin by encouraging new groundwater recharge opportunities, promoting the use of permeable surface materials, providing ample areas of open space in order to decrease surface runoff and promote groundwater recharge, and through the use of other LID techniques, such as bioswales, where feasible.

Safety Chapter

Goal SA-2: Reduce risks to human life, property, and public services associated with flooding.

Policy SA-2.1: Support and participate in planning efforts undertaken at the local, regional, State, and Federal levels to improve flood management facilities and dam safety through Santa Clara County.

Policy SA-2.5: Encourage and accommodate multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of Campbell's drainages, creeks, and detention ponds. Where appropriate and feasible, the City shall encourage the use of water detention facilities, such as GSI and LID, for use as groundwater recharge facilities.

Policy SA-2.7: Ensure that adequate drainage and erosion control measures are provided during construction of all new development which requires a building permit.

Policy SA-2.8: Ensure that any development activity that requires a grading permit does not impact adjacent properties, local creeks, or storm drainage

systems by designing and building the site to drain properly to minimize drainage issues and erosion.

Community Services and Facilities Chapter

Goal CSF-5: Design and maintain attractive, efficient, and environmentally sound storm drain systems to accommodate runoff from existing and projected development and prevent property damage due to flooding.

Policy CSF-5.1: Maintain and improve Campbell's storm drainage facilities.

Policy CSF-5.6: Applicable projects shall control peak flows and duration of runoff to prevent accelerated erosion of downstream watercourses.

Policy CSF-5.8: Owners and operators of stormwater treatment facilities shall maintain those facilities and ensure they continue to be effective.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Environmental Resources/Sustainability Element

Goal ES-7: Ensure protection and efficient use of all water resources.

Policy ES-7.1: Natural Water Bodies and Drainage Systems. In public and private development, use Low Impact Development (LID) principles to manage stormwater by mimicking natural hydrology, minimizing grading and protecting or restoring natural drainage systems.

Policy ES-7.2: Reduction of Impervious Surfaces. Minimize stormwater runoff and erosion impacts resulting from development and use [LID] designs to treat stormwater or recharge groundwater.

Policy ES-7.5: Groundwater Recharge Sites. Support the Santa Clara Valley Water District efforts to find and develop groundwater recharge sites within Cupertino and provide public recreation where possible.

Policy ES-7.8: Natural Water Courses. Retain and restore creek beds, riparian corridors, watercourses and associated vegetation in their natural state to protect wildlife habitat and recreation potential and assist in groundwater percolation. Encourage land acquisition or dedication of such areas.

Safety and Health Element

Goal HS-7: Protect people and property from risks associated with floods.

Policy HS-7.1: Evacuation Map. Prepare and update periodically an evacuation map for the flood hazard areas and distribute it to the general public.

Policy HS-7.2: Emergency Response to Dam Failure. Ensure that Cupertino is prepared to respond to a potential dam failure.

Policy HS-7.3: Existing Non-Residential Uses in the Flood Plain. Allow commercial and recreational uses that are now exclusively within the flood plain to remain in their present use or to be used for agriculture, provided it doesn't conflict with Federal, State and regional requirements.

Gilroy

City of Gilroy 2040 General Plan (2020)

Public Facilities and Services Element

Goal PFS 5: Maintain an effective storm drainage system to accommodate runoff, prevent property damage due to flooding, and improve environmental quality.

Policy PFS 5.1: Storm Drain Master Plan. Maintain, implement, and update as necessary the Storm Drain Master Plan to provide for stormwater facilities adequate to meet existing and future customer needs.

Policy PFS 5.2: Storm Collection System: Provide and maintain a storm collection system to convey stormwater to creeks and channels and to reduce the potential for localized flooding.

Potential Hazards Element

Goal PH 3: Protect life and minimize property damage from potential flood hazards.

Policy PH 3.4: Multiple Use of Flood Control Projects. Coordinate with Valley Water to design flood control measures and drainage channel improvements to serve multiple uses, including: recreational open space; trails; bikeways; groundwater recharge; protection and restoration of riparian vegetation and wildlife habitats; and enhancement of scenic qualities.

Policy PH 3.5: Drainage Channel Design. Design new drainage channels with gently sloping and curving banks to maximize safety, ease of maintenance, and natural appearance. To the greatest extent feasible, use riparian vegetation to stabilize the banks and to landscape the channels in a manner that is natural in character and easy to maintain, creating a scenic asset for the enjoyment of City residents.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Open Space, Conservation & Community Facilities Element

Goal 2: Preserve and protect and provide for public enjoyment of natural areas (natural creek channels, topography, vegetation), which are valuable natural resources.

Policy 2.3: Protect creeks, creekside areas and riparian habitat in their natural state while ensuring public safety and preserving a valuable natural resource.

Policy 2.4: Take an active role in promoting the adoption of a regional stream management plan.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Conservation Element

Goal 1: Conserve creeks and riparian areas as open space amenities and natural habitat areas.

Policy 1.1: Avoid fencing, piping, and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environment and habitat of the creek.

Policy 1.2: Work with the Santa Clara Valley Water District and other relevant regional agencies to enhance riparian corridors and provide adequate flood control by use of low impact restoration strategies.

Goal 5: Protect and conserve water resources.

Policy 5.1: Keep or restore major drainage courses in their natural condition insofar as possible because of their importance in supplying major vegetation, land forms and wildlife habitat, and storm drainage.

Goal 6: Protect and conserve soil resources.

Policy 6.1: Encourage soil stabilization measures that mitigate soil erosion and sedimentation.

Policy 6.3: Minimize the removal of vegetation and require replanting to maintain soil stability, prevent erosion, and retain the aesthetic quality of the community.

Goal 11: Promote and enhance the integrity of the natural environment.

Policy 11.5: Ensure that development projects are designed to conserve the natural slope, preserve existing native vegetation, limit invasive species, and conserve natural drainage channels and swales.

Safety Element

Goal 3: Minimize the risk of personal injury and property damage due to flooding.

Policy 3.1: Leave natural channels and flood plains in a natural state, unencumbered by development to the maximum extent feasible. Exceptions shall be made only in situations where it is essential to protect established property values or for public safety.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Public Facilities, Services, and Infrastructure Element

Goal PFS-3: Minimize the amount of stormwater runoff, as well as protect and improve the water quality of runoff.

Environment and Sustainability Element

Goal ENV-6: Protect wetlands and riparian corridors, including intermittent and ephemeral streams.

Policy ENV-6.2: Retain Natural Conditions. Retain creek beds, riparian corridors, water courses, and associated vegetation in their natural state to assist groundwater percolation and prevent erosion, downstream sedimentation, and other degradation

Goal ENV-15: Conserve and protect soil resources of the Town.

Policy ENV-15.1: Erosion Control Plans. Require all new developments in areas subject to soil erosion and slippage to provide an effective erosion control plan to minimize soil erosion. The erosion control plans shall be implemented prior to construction operations and maintained through the construction process.

Goal ENV-16: Protect and conserve watersheds and water quality.

Policy ENV-16.3: Valley Water. Cooperate with Valley Water and other agencies to protect watersheds, groundwater, and riparian habitats from degradation.

Policy ENV-16.4: Conserve Existing Creeks. Conserve existing creeks and avoid disturbances, including fencing, lighting, structures, hydrological barriers, and roads, to these areas.

Goal ENV-17: Protect and conserve water resources and infrastructure in a manner that sustains plant and animal life, supports urban activities and recreation, and protects public health and safety.

Policy ENV-17.6: Groundwater. Participate in the regulation of groundwater use to protect it as a natural resource and conserve it for potential use during extended drought.

Hazards and Safety Element

Goal HAZ-5: Reduce the potential for injuries, damage to property, economic and social displacement, and loss of life resulting from flood hazards.

Policy HAZ-5.4: Peak Stormwater Run-off. Require new development and redevelopment to provide design solutions to control the cumulative rate of peak stormwater run-off to no higher than pre-development levels.

Policy HAZ-5.5: Flood Protection Facilities. Cooperate with the Santa Clara Valley Water District to develop and maintain additional stormwater retention facilities in areas where they are needed or where the design capacity of existing retention facilities cannot be restored.

Milpitas

Milpitas 2040 General Plan (2021)

Conservation and Sustainability Element

Goal CON-3: Protect and maintain waterways and other sensitive habitat for plant and animal species throughout Milpitas and to protect the health of the San Francisco Bay.

Policy CON 3-3: Limit the disturbance of natural water bodies and drainage systems in Milpitas by conserving natural open space areas, protecting channels, and minimizing the impacts and pollutants from stormwater and urban runoff.

Policy CON 3-8: Encourage private and public development that is consistent with the City's Green Infrastructure Plan and incorporate natural processes for stormwater drainage, groundwater recharge and flood management.

Utilities and Community Services

Goal UCS-4: Provide an adequate level of service in the city's drainage system to accommodate runoff from existing and projected development and to prevent property damage due to flooding.

Policy UCS 4-1: Maintain and improve Milpitas's storm drainage facilities.

Policy UCS 4-2: Require all development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process and as required by the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit.

Policy UCS 4-4: Applicable projects shall incorporate Best Management Practices (BMPs) and Low Impact Development measures (LID) to treat

stormwater before discharge from the site. The facilities shall be sized to meet regulatory requirements.

Policy UCS 4-5: Applicable projects shall control peak flows and duration of runoff to prevent accelerated erosion of downstream watercourses.

Policy UCS 4-9: Maintain drainage channels in a naturalized condition with riparian corridors and wetland where appropriate, incorporating recreational trails, parkway vegetation, and other amenities and ensuring that vegetation does not reduce channel capacity. Where possible, set back development from these areas sufficiently to maximize habitat values.

Policy UCS 4-13: Owners and operators of stormwater treatment facilities shall maintain those facilities and ensure they continue to be effective.

Policy UCS 4-14: Construction sites shall incorporate measures to control erosion, sedimentation, and the generation of runoff pollutants to the maximum extent practicable. The design, scope and location of grading and related activities shall be designed to cause minimum disturbance to terrain and natural features. (Title II, Chapter 13 of the Municipal Code).

Safety

Goal SA-2: Reduce risks to life, property, and public services associated with flooding.

Policy SA 2-1: Participate in planning efforts undertaken at the regional, state, and federal levels to improve flood management facilities and dam safety throughout Santa Clara County.

Policy SA 2-2: Coordinate with regional and local agencies and private landowners to plan, finance, construct, and maintain local and regional stormwater management and conveyance facilities.

Policy SA 2-4: Ensure that construction activities and new development will not result in the creation of adverse, flood-related impacts to existing properties and/or flood control and drainage structures.

Policy SA 2-6: Encourage and accommodate multipurpose flood control projects that incorporate recreation, education, resource conservation, preservation of natural riparian habitat, and scenic value of drainages, creeks, and detention ponds.

Policy SA 2-8: To the greatest extent possible, cooperate with the Santa Clara Valley Water District and Army Corps of Engineers in their development and improvement of flood control facilities which are intended to protect areas from the occurrence of the “1%” or “100-year” flood, or other flood events as required by the state.

Policy SA 2-10: To the greatest extent possible, cooperate with the Santa Clara Valley Water District and Army Corps of Engineers in their efforts to develop and maintain additional flood protection retention facilities in areas where they are needed or where the design capacity of existing retention facilities cannot be restored.

Monte Sereno

Monte Sereno General Plan (2008)

Open Space and Conservation Element

Policy OSC-6.3: Reduce surface run-off by minimizing impervious surfaces associated with motor vehicles, as well as requiring projects to include site designs that minimize impervious surfaces and maximize on-site filtration.

Policy OSC-6.4: Require property owners to work with the natural topography and drainage to the extent possible when designing development projects to reduce the amount of grading and limit disturbances to natural drainage systems.

Health and Safety Element

Goal HS-3: Minimize risk to lives, property and public liability due to landslides, soil erosion and flood.

Policy HS-3.5: Cooperate with County Flood Control to maintain a natural creek setting to the extent possible while providing for adequate drainage capacity.

Policy HS-3.6: Require, as appropriate, construction of storm drainage improvements to prevent flooding during periods of heavy rainfall.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Safety, Services, and Infrastructure

Goal SSI-5: The least possible damage to persons and property from flooding.

Policy SSI-5.5: Off-Site Impacts. Require all local development to provide appropriate mitigation of off-site flooding impacts, including limiting runoff to pre-development levels and/or complete solutions to flooding and local drainage problems in the vicinity of the development, using such methods as detention and retention. (South County Joint Area Plan 12.08).

Goal SSI-6: Adequate, safe, and environmentally responsible drainage and flood control.

Policy SSI-6.1: Flood Control Projects. Minimize disruption of natural riparian areas by flood control projects needed to protect presently existing development by maintaining slow flow and stable banks through design and other appropriate mitigation measures. (South County Joint Area Plan 15.08)

Goal SSI-16: Minimized adverse effects on property, natural resources, and ground and surface water quality from stormwater runoff.

Policy SSI-16.2: Drainage System Capacity. Ensure that the level of detention or retention provided on the site of any new development is compatible with the capacity of the regional storm drainage system.

Policy SSI-16.4: Regional System Compatibility. Coordinate with the Santa Clara Valley Water District to ensure compatibility of the local and regional storm drainage systems.

Natural Resources and Environment

Goal NRE-5: Preservation and reclamation of streams and riparian areas as open space.

Policy NRE-5.3: Natural State of Streamside and Riparian Areas. Retain natural streamside and riparian areas in their natural state in order to preserve their value as percolation and recharge areas, natural habitat, scenic resources, and recreation corridors, and to stabilize banks. (South County Joint Area Plan 15.08)

Policy NRE-5.5: Flood Control Projects. Where flood control projects are needed to protect existing development, minimize disruption of streams and riparian systems, maintaining slow flow and stable banks through design and other appropriate mitigation measures. (South County Joint Area Plan 15.08)

Policy NRE-6.5: Soil and Erosion. Require development to be designed to conserve soil and avoid erosion. (South County Joint Area Plan 13.06)

Safety, Services, and Infrastructure

Goal SSI-5: The least possible damage to persons and property from flooding.

Policy SSI-5.2: Private Development in Flood-Prone Areas. If development is allowed in flood-prone areas, provide flood control facilities or appropriate flood-proofing prior to or in conjunction with development at developers' expense. (South County Joint Area Plan 12.05)

Policy SSI-5.9: Riparian Natural Functions. Restore and maintain the natural functions of riparian corridors, creeks, and channels to reduce flooding, convey stormwater flows, and improve water quality.

Mountain View

Mountain View 2030 General Plan (2012)

Infrastructure and Conservation

Goal INC-8: An effective and innovative stormwater drainage system that protects properties from flooding and minimizes adverse environmental impacts from stormwater runoff.

Policy INC-8.1: Citywide stormwater system. Maintain the stormwater system in good condition.

Goal INC-17: A healthy and well-managed watershed that contributes to improved water quality and natural resource protection.

Policy INC 17.1: Flood prevention. Provide and maintain City infrastructure to reduce localized flooding and protect community health and safety.

Policy INC 17.2: Natural hydrology in watersheds. Promote an ecologically sensitive approach to flood protection, encouraging natural hydrology and preserving habitat and ecology within watercourses.

Policy INC 17.3: Floodway preservation. Preserve floodways as a natural flood control mechanism.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Natural Environment Element

Goal N-3: Conservation of both natural and channelized creeks and riparian areas as open space amenities, natural habitat areas and elements of community design.

Policy N-3.2: Prevent the further channelization and degradation of Palo Alto's creeks.

Policy N-3.6: Discourage bank instability, erosion, downstream sedimentation, and flooding by minimizing site disturbance and nearby native vegetation removal on or near creeks and by reviewing grading and drainage plans for development near creeks and elsewhere in their watersheds.

Policy N-3.7: Avoid fencing, piping and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environment and habitat of the creek.

Policy N-3.8: Work with the SCVWD, San Francisquito Creek Joint Powers Authority (JPA) and other relevant regional and non-governmental agencies to enhance riparian corridors, provide compatible low-impact recreation and ensure adequate flood control.

Goal N-4: Water resources and infrastructure that are managed to sustain plant and animal life, support urban activities, and protect public health and safety.

Policy N-4.7: Ensure regulation of groundwater use to protect it as a natural resource and to preserve it as a potential water supply in the event of water scarcity.

Policy N-4.9: Work with neighboring jurisdictions and regional agencies to protect groundwater.

Safety Element

Goal S-2: Protection of life, ecosystems and property from natural hazards and disasters, including earthquake, landslide, flooding, and fire.

Policy S-2.8: Minimize exposure to flood hazards by protecting existing development from flood events and adequately reviewing proposed development in flood prone areas.

San José

Envision San José 2040 General Plan (Adopted 2011; Amended 2024)

Environmental Resources

Goal ER-9: Water Resources. Protect water resources because they are vital to the ecological and economic health of the region and its residents.

Policy ER-9.3: Utilize water resources in a manner that does not deplete the supply of surface or groundwater or cause overdrafting of the underground water basin.

Policy ER-9.5: Protect groundwater recharge areas, particularly creeks and riparian corridors.

Goal EC-5: Flooding Hazards. Protect the community from flooding and inundation and preserve the natural attributes of local floodplains and floodways.

Environmental Considerations/Hazards

Policy EC-5.4: Develop flood control facilities in cooperation with the Santa Clara Valley Water District to protect areas from the occurrence of the "1%" or "100-year" flood or less frequent flood events when required by the State.

Policy EC-5.8: Cooperate with the Santa Clara Valley Water District to develop and maintain additional flood protection retention facilities in areas where they are needed or where the design capacity of existing retention facilities cannot be restored.

Policy EC-5.10: Encourage the preservation and restoration of urban creeks and rivers to maintain existing floodplain storage. When in-channel work is proposed, engineering techniques which include the use of plant materials (bioengineering) are encouraged.

Policy EC-5.18: Maintain City storm drainage infrastructure in a manner that reduces flood hazards. As the storm drainage system is extended or modified, provide capacity to adequately convey the 10-year storm event.

Infrastructure

Goal IN-3: Water Supply, Sanitary Sewer and Storm Drainage. Provide water supply, sanitary sewer, and storm drainage infrastructure facilities to meet future growth planned within the City, to assure high-quality service to existing and future residents, and to fulfill all applicable local, State and Federal regulatory requirements.

Policy IN-3.8: In designing improvements to creeks and rivers, protect adjacent properties from flooding consistent with the best available information and standards from the Federal Emergency Management Agency (FEMA) and the California Department of Water Resources (DWR). Incorporate restoration of natural habitat into improvements where feasible.

Policy IN-3.11: The "modified floodplain design" is the preferred design for future flood protection facilities. Use the "widen-one-bank" and "trapezoidal channel" designs only when funding or right-of-way limitations make the use of the modified flood plain design impractical. For future development, consider factors such as flooding risks, proximity to waterways, and the potential for implementing flood protection measures.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan

Safety Policies

Policy 5.10-5-P16: Require new development to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity and protect water quality.

Policy 5.10.5-P17: Require that grading and other construction activities comply with the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control Measures and with the California Stormwater Quality Association (CASQA), Stormwater Best Management Practice Handbook for Construction.

Policy 5.10.5-P20: Maintain, upgrade and replace storm drains throughout the City to reduce potential flooding.

Saratoga

City of Saratoga 2040 General Plan (2024)

Open Space and Conservation Element

Goal OSC-8: Protect existing watercourses in the community and maintain water quality in surface and subsurface water sources.

Policy OSC-8.1: Retain surface watercourses in their natural condition to the greatest extent possible.

Safety Element

Goal SAF-3: Ensure public and private properties are well protected from flooding and flood-induced hazards.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Safety and Noise Element

Goal SN-1: Acceptable Levels of Risk for Natural and Human-Caused Hazards. Ensure that natural and human-caused hazards are recognized and considered in decisions affecting the community and that land uses reflect acceptable levels of risk based on identified hazards and occupancy.

Policy SN-1.2 Take measures to protect life and property from the effects of a 1 percent (100 year) flood.

Policy SN-1.3: Operate and maintain the storm drainage system at a level to minimize damages and ensure public safety.

Noise

Santa Clara County and each of the cities within the county have established policies and guidelines that aim to minimize the effects of noise on people through prescriptive construction standards, zoning restrictions, hours of operation, and suppression techniques. Noise level goals are defined that are assumed to be compatible with various land use types within each jurisdiction. However, all jurisdictions recognize that higher than standard noise levels will be generated from time to time by heavy equipment engaged in construction or maintenance activities. Because heavy-equipment noise is an unavoidable necessity particularly for public works projects, jurisdictions typically include wording in noise ordinances and elements exempting these short-term, temporary, higher noise levels from compliance with the overall standards for land uses.

Santa Clara County

Santa Clara County General Plan (1994)

Safety and Noise Element (Countywide Issues and Policies from Book A)

Policy C-HS 24: Environments for all residents of Santa Clara County free from noises that jeopardize their health and well-being should be provided through measures which promote noise and land use compatibility.

Policy SN-1.3: Noise impacts from public and private projects should be mitigated.

Implementation Recommendations:

Action C-HS(i) 23: Project design review should assess noise impacts on surrounding land uses. (Implementors: County and cities.)

Action C-HS(i) 24: Where necessary, construct sound walls or other noise mitigations. (Implementors: County, cities, and public agencies.)

Action C-HS(i) 25: Prohibit construction in areas which exceed applicable interior and exterior standards, unless suitable mitigation measures can be implemented. (Implementors: County and cities.)

Action C-HS(i) 26: Require project-specific noise studies to assess actual and protected dB noise contours for proposed land uses likely to generate significant noise. (Implementors: County and cities.)

Policy C-HS 26: New development in areas of noise impact (areas subject to sound levels of 55 DNL or greater) should be approved, denied, or conditioned so as to achieve a satisfactory noise level for those who will use or occupy the facility (as defined in "Noise Compatibility Standards for Land Use" and "Maximum Interior Noise Levels For Intermittent Noise").

Safety and Noise Element (Rural and Unincorporated Area Issues and Policies from Book B)

Policy R-HS 1: Significant noise impacts from either public or private projects should be mitigated.

Policy R-HS 2: The County should seek opportunities to minimize noise conflicts in the rural areas.

Policy R-HS 3: New development in areas of noise impact (areas subject to sound levels of 55 DNL or greater) should be approved, denied, or conditioned so as to achieve a satisfactory noise level for those who will use or occupy the facility (as defined in "Noise Compatibility Standards for Land Use" and "Maximum Interior Noise Levels For Intermittent Noise").

Implementation Recommendations:

Action R-HS(i) I: Project design review should assess noise impacts on surrounding land uses. (Implementor: County)

Action R-HS(i) 2: Where necessary, require appropriate noise mitigations. (Implementor: County)

Action R-HS(i) 3: Prohibit construction in areas which exceed applicable interior and exterior standards, unless suitable mitigation measures can be implemented. (Implementors: County)

Municipal Code and Ordinances

Santa Clara County Municipal Code (Section B11-154)

Operation of tools or construction equipment on weekdays and Saturdays is not allowed between the hours of 7 p.m. and 7a.m. No operation allowed on Sundays or holidays except for emergency work. Mobile equipment must not result in a noise level in excess of 75dBA for single/two-family residential (SFR), 80dBA for multi-family residential (MFR), or 85 dBA for commercial areas.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Noise Element

Goal N-1: Preserve and enhance the quality of existing and future land uses by minimizing exposure to harmful and excessive noise.

Policy N-1.8: For projects that are required to prepare an acoustical study, the following stationary and transportation noise source criteria shall be used to determine the significance of those impacts:

A significant impact will occur if the project results in an exceedance of the noise level standards contained in this element, or for instances where the ambient noise level is already above the standards contained in this element, the project will result in an increase in ambient noise levels by more than 3 dB. This does not apply to construction activities which are conducted according to the best practices contained in Chapter 18.04 of the Campbell Municipal Code and outlined in Action N-1f. Compliance with these requirements shall be sufficient to reduce construction related noise impacts to a less than significant level.

Policy N-1.11: Require developers to prepare a construction management plan that defines best management practices to reduce construction noise and includes proposed truck routes as part of the entitlement process.

Policy N-1.13: Continue to ensure that existing development is protected, to the greatest extent feasible, from noise impacts due to construction on adjacent or nearby properties.

Policy N-1.17: Require construction activities to comply with standard best practices. Construction activities outside of the permitted construction hours identified in the Campbell Municipal Code may be approved on a case-by-case basis by the Building Official.

Policy N-1.20: Exempt temporary emergency operations or emergency equipment usage from noise standard criteria set by this element.

Action N-1.b: Update the Campbell Municipal Code to include the following construction noise best practices and requirements:

- Establish standard for when a construction staging and phasing plan shall be required for new development projects and significant remodels.
- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.
- Unnecessary idling of internal combustion engines shall be prohibited.
- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.
- The required construction-related noise mitigation plan shall also specify that haul truck deliveries are to occur within the same range of hours specified for construction equipment.
- The construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

Municipal Code and Ordinances

Campbell Municipal Code (Section 18.04.052)

Construction activity shall be limited to the hours of eight a.m. and five p.m. daily, Monday through Friday. Saturday hours of construction shall be nine a.m. and four p.m. There shall be no construction activity on Sundays or Public holidays, as defined by Title 5 U.S. Code § 6103(a).Vibrations from temporary construction and demolition are exempt from vibration perception standards.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Land Use and Community Design Element

Goal LU-27: Preserve neighborhood character and enhance connectivity to nearby services to create complete neighborhoods.

Policy LU-27.8: Protection. Protect residential neighborhoods from noise, traffic, light, glare, odors and visually intrusive effects from more intense development with landscape buffers, site and building design, setbacks and other appropriate measures.

Health and Safety Element

Goal HS-8: Minimize noise impacts on the community and maintain a compatible noise environment for existing and future land use.

Policy HS-8.1: Land Use Decision Evaluation. Use the Land Use Compatibility for Community Noise Environments chart, the Future Noise Contour Map (see Figure D-1 in Appendix D) and the City Municipal Code to evaluate land use decisions.

Strategy HS-8.2.2: Noise Control Techniques. Require analysis and implementation of techniques to control the effects of noise from industrial equipment and processes for projects near low intensity residential uses.

Strategy HS-8.2.3: Sound Wall Requirements. Exercise discretion in requiring sound walls to be sure that all other measures of noise control have been explored and that the sound wall blends with the neighborhood. Sound walls should be designed and landscaped to fit into the environment.

Policy HS-8.3: Construction and Maintenance Activities. Regulate construction and maintenance activities. Establish and enforce reasonable allowable periods of the day, during weekdays, weekends, and holidays for construction activities. Require construction contractors to use the best available technology to minimize excessive noise and vibration from construction equipment such as pile drivers, jack hammers, and vibratory rollers.

Policy HS-8.7: Reduction of Noise From Trucking Operations. Work to carry out noise mitigation measures to diminish noise along Foothill and Stevens Creek Boulevards from the quarry and cement plant trucking operations. These measures include regulation of truck speed, the volume of truck activity, and trucking activity hours to avoid late evening and early morning. Alternatives to truck transport, specifically rail, are strongly encouraged when feasible.

Municipal Code and Ordinances

Cupertino Municipal Code (Section 10.48.053)

Construction activities are limited to daytime hours (7 a.m. to 8 p.m. Monday through Friday, and 9 a.m. and 6 p.m. Saturdays and Sundays). High-quality noise muffler and abatement devices must be installed and in good condition on all construction equipment, and no single device may produce a noise in excess of 87 dBA at a distance of 25 feet OR noise levels at nearby properties must not exceed 80 dBA. However, special exemptions may be granted by the noise control officer, which would include notification to nearby properties.

Leaf blowers must be certified to be 65 dBA or less and operated during the limited daytime hours specified above.

Gilroy

City of Gilroy 2040 General Plan (2020)

Potential Hazards Element

Goal PH 6: Protect Gilroy residents from exposure to excessive noise and its effects through appropriate mitigation measures and responsive land use planning, especially in regard to noise-sensitive land uses such as schools, hospitals, and housing for seniors.

Policy PH 6.3: Maximum Permissible Noise Levels. Ensure that outdoor and indoor noise levels are within the maximum permitted levels. Prohibit further development of sensitive uses in areas where the current or projected future noise levels exceed these standards and feasible mitigation is not available to reduce the noise level to meet the standards identified in Table 9-1.

Policy PH 6.5: Acoustical Design. Consider the acoustical design of projects in the development review process to reduce noise to an acceptable level. Ensure that noise mitigation features are designed and implemented in an aesthetically pleasing and consistent manner.

Policy PH 6.10: Construction Noise. Require proposed development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on those uses, to the extent feasible.

Policy PH 6.11: Construction and Maintenance Noise Limits. Limit the hours of construction and maintenance activities to the less sensitive hours of

the day (7:00 am to 7:00 pm Monday through Friday and 9:00 am to 7:00 pm on Saturdays). Construction hours that vary from these timeframes may be approved by the Building Official in conformance with Article XVI. Hours of Construction of the Gilroy City Code.

Policy PH 6.12: Vibration Impact Assessment. Require a vibration impact assessment for proposed development projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures or sensitive receptors would occur

Municipal Code and Ordinances

Gilroy Municipal Code (Section 16.38)

Construction equipment may only be operated between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and 9:00 a.m. and 7:00 p.m. on Saturday. No construction work is permitted on Sunday or city holidays. Exceptions may be granted by the chief building official.

Loud noises during curfew from 10:00 p.m. and 7:00 a.m. are prohibited. This includes noise from animals.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Natural Environment and Hazards Element

Goal 7: Minimize the amount of noise to which the community is exposed and the amount of noise created by future development and urban activities.

Policy 7.2: Enforce the following maximum acceptable noise levels for new construction of various noise-sensitive uses in an existing noise environment.

- 60 dBA CNEL is the maximum acceptable outdoor noise exposure level for single-family residential areas.
- 65 dBA CNEL is the maximum acceptable outdoor noise exposure level for multiple-family residential areas.
- 7- dBA CNEL is the maximum acceptable outdoor noise exposure level for schools (public and private), libraries, churches, hospitals, nursing homes, parks, commercial, and recreation areas. Excepted from these standards are golf courses, stables, water recreation, and cemeteries.

Policy 7.6: Consider noise attenuation measures to reduce noise levels to City-adopted acceptable levels for any development along roadways.

Policy 7.9: Minimize stationary noise sources and noise emanating from construction activities.

Municipal Code and Ordinances

Los Altos Municipal Code (Section 6.16.07) Construction activities limited to the hours between 7:00 a.m. and 5:30 p.m. Monday through Friday and between 9:00 a.m. and 3:00 p.m. on Saturday in residential areas. In non-residential areas, construction can occur between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturday. No construction work is permitted on Sunday or city holidays. Equipment may not be operated on holidays. Maximum permissible noise levels during daytime operation is 75 dBA for R1 zones, 80 dBA for PCF and R3 zones, and 85 dBA for OA and C zones.

Gasoline-powered blowers prohibited. Use or operation of portable gasoline-powered leaf blowers within the city for any purpose except testing noise levels.

Vibration. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty (150) feet (forty-six (46) meters) from the source if on a public space or public right-of-way.

Owning, possessing, or harboring any animal or bird which howls, barks, meows, squawks, or makes other noises continuously and/or incessantly for a period of ten (10) minutes or intermittently for one-half hour or more which creates a noise disturbance across a residential or commercial real property line or within a noise sensitive zone is prohibited.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Noise Element

Goal 1: Minimize noise levels so that residents may enjoy the amenities of living in a quiet, semi-rural community.

Policy 1.1: Noise levels shall be compatible with the Town's semi-rural atmosphere and consistent with Town standards.

Policy 1.2: All appropriate methods for reduction of noise at the source (i.e. automobile, aircraft, etc.) shall be supported.

Policy 1.3: Individual use of noise-generating equipment should not interfere with the normal use and enjoyment of outdoor or indoor areas on surrounding properties.

Policy 1.4: Noise generated by construction equipment shall be attenuated to the maximum extent possible. Hours of construction activity shall be regulated to minimize the impact of noise on surrounding residential properties.

Program 1.2: Continue to restrict the hours of non-emergency grading and construction activities to specified days of the week and times of day to minimize noise impacts on neighboring residents and other sensitive land uses.

Program 1.3 Encourage construction contractors to use construction equipment that incorporates the best available noise control technology.

Program 1.8: Continue to address potential noise impacts when reviewing applications for new or renewed conditional use permits.

Policy 2.6: Work with adjoining municipalities and public and private landholders to assure noise-compatible land uses across jurisdictional boundaries.

Program 2.1: Evaluate noise impacts on surrounding land uses during the site development review and permitting process.

Program 2.2: Utilize the Land Use and Noise Compatibility Guidelines as a basis for determining the compatibility of land uses.

Program 2.3: To determine noise exposure, use the noise contour maps or more detailed noise analysis if appropriate.

Program 2.4: Require the mitigation of all significant noise impacts as a condition of project approval.

Municipal Code and Ordinances

Town of Los Altos Hills Municipal Code (Title 5, Chapter 2)

Construction near residential areas is limited to the hours of 8:00 a.m. to 5:30 p.m. Monday through Friday. Construction is not permitted on Saturdays without a permit, and no construction is permitted on Sundays or public holidays.

No person shall operate any leaf blower that excess a noise level in excess of 65dB measured at a distance of 50 feet as specified by the American National Standard Institute (ANSI) standards B175 for leaf blowers. This violation will need to be observed by the Town's Code Enforcement Officer or their designee. All leaf blowers shall carry the manufacturer's sticker certifying 65 dB compliance, or in the alternative must be certified by the Planning Director of the designee. No person shall make any modification to the muffler or the manufacturer's noise suppression system of a leaf blower after certification.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Environment and Sustainability Element

Goal ENV-18: Consider existing and future noise levels when making land use decisions in order to protect people from exposure to excessive noise levels, as defined for each land use type. Particular attention will be given to protecting noise sensitive land uses.

Policy ENV-18.3: Exterior Noise Levels. Require all exterior noise levels to be based on the compatibility criteria shown on Figure 8-6.

Policy ENV-18.7: Noise Limit Enforcement. Enforce noise limits and monitor compliance with noise standards.

Goal ENV-21: Ensure that construction and maintenance equipment noise does not adversely affect land uses.

Policy ENV-21.1: Noise Attenuation, Town Equipment. All Town-owned and operated construction and maintenance equipment, and equipment for these activities operated under contract with the Town, shall contain state-of-the-art noise attenuation equipment.

Policy ENV-21.2: Noise Attenuation, Private Equipment Monitor and modify Town ordinances, as appropriate, to control nuisance noise from maintenance equipment used in the community.

Policy ENV-21.3: Noise Reduction Legislation Continue to support State legislation reducing noise levels for machinery, motor vehicles, and other equipment that generates excessive noise.

Municipal Code and Ordinances

Town of Los Gatos Municipal Code (Section 16.20.035)

Construction activities are limited to 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 4 p.m. on Saturday. Construction is not allowed on Sunday and holidays. No single device may produce a noise in excess of 85 dBA at a distance of 25 feet and the noise levels at nearby properties must not exceed 85 dBA. Use of powered equipment is not time-limited in commercial, industrial, or public spaces.

Gasoline leaf blowers shall be prohibited from use in all residential, commercial, and industrial zones or public space. Electric leaf blowers in excess of sixty-five (65) decibels shall be prohibited from use in all residential, commercial, and industrial zones or public space, measured fifty (50) feet from the source.

Owning, possessing, or harboring any animal or bird which howls, barks, meows, squawks, or makes other noises continuously and/or incessantly for a period of ten (10) minutes or intermittently for one-half hour or more which creates a noise disturbance across a residential or commercial real property line or within a noise sensitive zone is prohibited.

Milpitas

Milpitas 2040 General Plan (2021)

Noise Element

Goal N-1: Preserve a nuisance-free noise environment for existing and future land uses by minimizing exposure to harmful and excessive noise Levels.

Policy N 1-6: For projects that are required to prepare an acoustical study to analyze noise impacts, the following criteria shall be used to determine the significance of those impacts:

A significant impact will occur if the project results in an exceedance of the noise level standards contained in this element. In instances where the ambient noise level is already above the standards contained in this element, a significant impact will occur if the project will result in an increase in ambient noise levels by more than 3 dB. This does not apply to temporary construction activities.

Policy N 1-8: Require construction activities to comply with standard best practices to reduce noise exposure to adjacent sensitive receptors.

Action N-1d: During the environmental review process, determine if proposed construction will constitute a significant impact on nearby sensitive receptors and if necessary require mitigation measures in addition to the standard best practice controls. Suggested best practices for control of construction noise include:

- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- Noise-generating construction activities, including truck traffic coming to and from the construction site for any purpose, shall be limited to between the hours of 7:00 am and 7:00 pm. No construction shall occur on National holidays.
- All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.
- Unnecessary idling of internal combustion engines shall be prohibited for a duration of longer than five minutes.

- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.
- Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing.
- The construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

Municipal Code and Ordinances

Milpitas Municipal Code (Chapter 213)

Site Construction Regulations.

3.07: No person shall engage or permit others to engage in construction of any building or related road or walkway, pool or landscape improvement or in the construction operations related thereto, including, delivery of construction materials, supplies, or improvements on or to a construction site except within the hours of 7:00 a.m. to 7:00 p.m. on weekdays and weekends. No construction work shall be conducted or performed on the holidays indicated in Section V-213-2-2.05 of this Chapter.

3.08: Exemption from Off-Site Construction Regulations. Exempt from the Off-Site Construction Regulations of this article are as follows:

(1) Emergency construction and repair that is necessary for protection of life and property,

(2) Operation preempted from local regulation by state law, such as construction of public school buildings,

(3) Furnishing utility-type service including construction and maintenance of utility facilities,

(4) Any work on an existing single-family or duplex (two-family) dwelling undertaken by the property owner,

(5) Operation to construct and maintain facilities within the public right-of-way as deemed necessary by the Public Works Director, and

(6) Any other circumstances where the City Manager deems that an exemption would be appropriate.

Monte Sereno

Monte Sereno General Plan (2008)

Health and Safety Element

Goal HS-6: Reduce noise levels within neighborhoods resulting from vehicular traffic and construction activity.

Policy HS-6.1: Reduce noise levels in residential areas shall restricting truck traffic to designated routes and monitoring speed of local traffic.

Policy HS-6.2: Encourage the use of the latest noise control technology to minimize noise in residential neighborhoods.

Policy HS-6.3: Continue to enforce local and State noise regulations to minimize noise impacts associated with construction and public and private activities.

Policy HS-6.5: Cooperate with Santa Clara County, State and federal agencies, private businesses and individuals to control and maintain an acceptable noise environment in Monte Sereno.

Action HS-6.1: Require construction techniques for noise buffering, barriers or setbacks in development subject to high noise levels, to reduce noise to a level within the noise/land use compatibility standards.

Municipal Code and Ordinances

Monte Sereno Municipal Code (Section 9.04.457)

Construction activities are generally limited to 8 a.m. to 8 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays. Construction is not permitted on Sundays/public holidays. However, work not requiring a permit from the city is exempted from the time restrictions.

The use of mechanical blowers is limited to 8:00 am to 5:00 pm Monday through Friday, 9:00 a.m. to 5:00 pm Saturday. The maximum volume for mechanical blowers is 65 decibels as measured 50 feet from the blower for backpack-mounted blowers, and 70 decibels as measured 50 feet from the blower for handheld blowers.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Safety, Services, and Infrastructure Element

Goal SSI-8: Prevention of noise from interfering with human activities or causing health problems.

Policy SSI-8.1: Exterior Noise Level Standards. Require new development projects to be designed and constructed to meet acceptable exterior noise level standards (see Table SSI-1), as follows:

- Apply a maximum exterior noise level of 60 dBA Ldn in residential areas where outdoor use is a major consideration (e.g., backyards in single-family housing developments and recreation areas in multi-family housing projects). Where the City determines that providing an Ldn of 60 dBA or lower cannot be achieved after the application of reasonable and feasible mitigation, an Ldn of 65 dBA may be permitted.

- Indoor noise levels should not exceed an Ldn of 45 dBA in new residential housing units.

- Noise levels in new residential development exposed to an exterior Ldn 60 dBA or greater should be limited to a maximum instantaneous noise level (e.g., trucks on busy streets, train warning whistles) in bedrooms of 50 dBA. Maximum instantaneous noise levels in all other habitable rooms should not exceed 55 dBA. The maximum outdoor noise level for new residences near the railroad shall be 70 dBA Ldn, recognizing that train noise is characterized by relatively few loud events.

Policy SSI-8.6: Stationary Noise Level Standards. Consider noise levels produced by stationary noise sources associated with new projects significant if they substantially exceed existing ambient noise levels.

Policy SSI-8.9: Site Planning and Design. Require attention to site planning and design techniques other than sound walls to reduce noise impacts, including: a) installing earth berms, b) increasing the distance between the noise source and the receiver; c) using non-sensitive structures such as parking lots, utility areas, and garages to shield noise sensitive areas; d) orienting buildings to shield outdoor spaces from the noise source; and e) minimizing the noise at its source.

Goal SSI-9: Protection from noise associated with motor vehicles and railroad activity.

Policy SSI-9.1: Techniques to Reduce Traffic Noise. Use roadway design, traffic signalization, and other traffic planning techniques (such as limiting truck traffic in residential areas) to reduce noise caused by speed or acceleration of vehicles.

Municipal Code and Ordinances

Morgan Hill Municipal Code (Section 8.28.040) Construction activities are generally limited to 7 a.m. to 8 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or public holidays. However, public work activities are exempted from the time restrictions.

The operation of any noise-creating blower, power fan or internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, unless the noise from such blower or fan is muffled and such engine is equipped with a muffler device to deaden such noise is prohibited.

The keeping of any animal or bird which, by causing frequent or long-continued noise, disturbs the comfort or repose of any person in the vicinity is prohibited.

Mountain View

Mountain View 2030 General Plan (2012)

Noise Element

Goal NOI-1: Noise levels that support a high quality of life in Mountain View.

Policy NOI 1.3: Exceeding acceptable noise thresholds. If noise levels in the area of a proposed project would exceed normally acceptable thresholds, the City shall require a detailed analysis of proposed noise reduction measures to determine whether the proposed use is compatible. As needed, noise insulation features shall be included in the design of such projects to reduce exterior noise levels to meet acceptable thresholds, or for uses with no active outdoor use areas, to ensure acceptable interior noise levels.

Policy NOI 1.4: Site planning. Use site planning and project design strategies to achieve the noise level standards in NOI 1.1 (Land use compatibility) and in NOI 1.2 (Noise-sensitive land uses). The use of noise barriers shall be considered after all practical design-related noise measures have been integrated into the project design.

Policy NOI 1.6: Sensitive uses. Minimize noise impacts on noise-sensitive land uses, such as residential uses, schools, hospitals and child-care facilities.

Policy NOI 1.7: Stationary sources. Restrict noise levels from stationary sources through enforcement of the Noise Ordinance.

Municipal Code and Ordinances

Mountain View Municipal Code (Article VI, SEC. 8.70)

Construction activities are limited to 7 a.m. to 6 p.m. on weekdays. No work is permitted on weekends or holidays without prior approval.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Noise Element

Goal N-6: An environment that minimizes the adverse impacts of noise.

Policy N 6.3.1: Continue working to reduce noise impacts created by events and activities taking place in communities adjoining Palo Alto.

Policy N 6.3.2: Evaluate the feasibility of adopting noise criteria in the purchase of new City vehicles and equipment.

Municipal Code and Ordinances

Palo Alto Municipal Code (Section 9.10.060)

Construction activities on non-residential areas are limited to the hours of 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or public holidays. No single piece of equipment may produce a noise level in excess of 110 dBA at 25 feet, nor may noise level at any point outside of the property plane exceed 110 dBA. A sign must be posted at the entrance of the construction site indicating construction hours and violation penalties.

No person shall operate any leaf blower which does not bear an affixed manufacturer's label indicating the model number of the leaf blower and designating a noise level not in excess of sixty-five dBA when measured from a distance of fifty feet utilizing American National Standard Institute methodology. Any leaf blower which bears such a manufacturer's label shall be presumed to comply with any noise level limit of this chapter provided that it is operated with all mufflers and full extension tubes supplied by the manufacturer for that leaf blower. No person shall operate any leaf blower without attachment of all mufflers and full extension tubes supplied by the manufacturer for that leaf blower.

No person shall operate any leaf blower within any non-residential zone except during the following hours: eight a.m. and six p.m. Monday through Friday, and ten a.m. to four p.m. Saturday. No person shall operate any leaf blowers on Sundays and holidays. No person shall operate any leaf blower powered by an internal combustion engine within any residential zone after July 1, 2005. Commercial operators of leaf blowers are prohibited from operating any leaf blower within the city if they do not prominently display a certificate approved by the Chief of Police verifying that the operator has been trained to operate leaf blowers according to standards adopted by the Chief of Police.

San José

Envision San José 2040 General Plan (2011)

Environmental Leadership Element

Goal EC-1: Community Noise Levels and Land Use Compatibility. Minimize the impact of noise on people through noise reduction and suppression techniques, and through appropriate land use policies.

Policy EC-1.7: Require construction operations within San José to use best available noise suppression devices and techniques and limit construction hours near residential uses per the City's Municipal Code. The City considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial or office uses would:

- Involve substantial noise generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months.

For such large or complex projects, a construction noise logistics plan that specifies hours of construction, noise and vibration minimization measures, posting or notification of construction schedules, and designation of a noise disturbance coordinator who would respond to neighborhood complaints will be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on neighboring residents and other uses.

Goal EC-2: Vibration. Minimize vibration impacts on people, residences, and business operations.

Policy EC-2.3: Require new development to minimize continuous vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, including ruins and ancient monuments or building that are documented to be structurally weakened, a continuous vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to a building. A continuous vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction. Equipment or activities typical of generating continuous vibration include but are not limited to: excavation equipment; static compaction equipment; vibratory pile drivers; pile-extraction equipment; and vibratory compaction equipment. Avoid use of impact pile drivers within 125 feet of any buildings, and within 300 feet of historical buildings, or buildings in poor condition. On a project-specific basis, this distance of 300 feet may be reduced where warranted by a technical study by a qualified professional that verifies that there will be virtually no risk of cosmetic damage to sensitive buildings from the new development during demolition and construction.

Municipal Code and Ordinances

San José Municipal Code (Section 20.100.450)

Construction occurring within 500 feet of a residential unit is limited to the hours of 7 a.m. to 7 p.m. on weekdays. However, these time restrictions are limited only to construction activities requiring a permit from the city.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

Goals and Policies Element

Goal 5.10.6-G1: Noise sources restricted to minimize impacts in the community.

Policy 5.10.6-P2: Incorporate noise attenuation measures for all projects that have noise exposure levels greater than General Plan "normally acceptable" levels, as defined on Table 5.10-1.

Policy 5.10.6-P3: New development should include noise control techniques to reduce noise to acceptable levels, including site layout (setbacks, separation and shielding), building treatments (mechanical ventilation system, sound-rated windows, solid core doors and baffling) and structural measures (earthen berms and sound walls).

Policy 5.10.6-P4: Encourage the control of noise at the source through site design, building design, landscaping, hours of operation and other techniques.

Policy 5.10.6-P5: Require noise-generating uses near residential neighborhoods to include solid walls and heavy landscaping along common property lines, and to place compressors and mechanical equipment in sound-proof enclosures.

Policy 5.10.6-P11: Develop and include noise reduction measures with improvements and extensions of City streets.

Municipal Code and Ordinances

Santa Clara Municipal Code (Section Section 9.10.070)

Construction occurring within 300 feet of a residential area is generally limited to the hours of 7 a.m. to 6 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or holidays.

Saratoga

City of Saratoga 2040 General Plan (2024)

Noise Element

Goal NOI-1: Maintain or reduce noise levels in the City to avoid exposure to unacceptable or harmful noise.

Policy NOI-1.2: The City shall use the planning and code enforcement processes to discourage activities, practices, or land uses that create or result in excessive noise exposure.

Policy NOI-1.3: The City shall require that all City-owned and operated equipment and equipment operated under contract with the City meet City noise standards.

Goal NOI-2: Promote land-use compatibility by addressing noise exposure from existing noise sources.

Policy NOI-2.7 Noise generated by equipment, animals and amplified sound shall meet adopted standards as amended from time to time.

Goal NOI-3: Promote land-use compatibility by addressing noise exposure from new noise sources.

Municipal Code and Ordinances

Saratoga Municipal Code (Section 7-30.040)

Construction activities permitted only between the hours of 7:30 a.m. and 6:00 p.m. on weekdays and between 9 a.m. to 5 p.m. on Saturdays in residential areas. No construction is permitted on holidays and on weekends in commercial areas. No individual piece of equipment may exceed a noise level of 83 dBA at a distance of 25 feet.

The use of any leaf blower other than a certified leaf blower, as defined by this article, is prohibited. Certified leaf blower means a leaf blower with a noise level measured at sixty-five dBA or less at a distance of fifty feet. Certified leaf blowers may be used or operated Monday through Friday between 8:00 A.M. and 5:00 P.M., on Saturdays between 10:00 A.M. and 5:00 P.M., and may not be used on Sundays.

Powered garden tools shall not exceed seventy-eight dBA at any point twenty-five feet or more from the source of noise. Such tools may be utilized during the following days and times:

(1) Gasoline powered chainsaws may be utilized between 8:00 A.M. and 5:00 P.M. Monday through Friday and between 10:00 A.M. and 5:00 P.M. on Saturdays and Sundays.

(2) Except as specified above, other powered garden tools may be utilized between the hours of 8:00 A.M. and 9:00 P.M. any day of the week.

Wood chippers shall not exceed one hundred dBA at any point twenty-five feet or more from the source of noise. Wood chippers may be utilized between 8:00 A.M. and 5:00 P.M. Monday through Friday and Saturdays between 10:00 A.M. and 5:00 P.M. Use of wood chippers shall not be allowed on Sundays.

It shall be unlawful for any person to harbor, keep or maintain any animal, including birds, in the City which howls, barks, meows, squawks, or makes other noises which creates a noise disturbance across a property boundary during the following times:

(1) Between the hours of 10:00 P.M. and 7:00 A.M.

(2) Between the hours of 7:00 A.M. and 10:00 P.M. where the noise disturbance occurs continuously for a period of five minutes or intermittently for at least thirty minutes.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Safety and Noise Element

Goal SN-8: Compatible Noise Environment. Maintain or achieve a compatible noise environment for all land uses in the community.

Policy SN-8.8: Require a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used within 600 feet of an existing structure. If applicable, the City shall require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures would occur.

Policy SN-8.13: Consider techniques which block the path of noise and insulate people from noise.

Goal SN-9: Acceptable limits for community noise. Maintain or achieve acceptable limits for the levels of noise generated by land use operations and single events.

Policy SN-9.1: Regulate land use operational noise including but not limited to hours of operation limits, consistent with operational noise standards in the Sunnyvale Municipal Code.

Municipal Code and Ordinances

Sunnyvale Municipal Code (Section 16.08.030)

Construction activities permitted only between the hours of 7 a.m. and 6 p.m. on weekdays and between 8 a.m. to 5 p.m. on Saturdays. Construction is not permitted on Sundays or on national holidays.

No loud environmentally disruptive noises, such as air compressors without mufflers, continuously running motors or generators, loud playing musical instruments, radios, etc., will be allowed where such noises may be a nuisance to adjacent residential neighborhoods.

Public Services and Utilities

Santa Clara County

Santa Clara County General Plan

The Santa Clara County General Plan contains the following policies that are relevant to public services and utilities.

Resource Conservation Chapter

Water Supply

Policy C-RC 5: An adequate, high quality water supply for Santa Clara County should be considered essential to the needs of households, business and industry.

Policy C-RC 6: A comprehensive strategy for meeting long term projected demand for water should at a minimum include the following:

a. Continued conservation and increased reclamation;

b. Securing additional sources as supplemental supply;

c. System and local storage capacity improvements; and

d. Drought contingency planning and groundwater basin management programs.

Policy C-RC 7: Countywide land use and growth management planning should be coordinated with overall water supply planning by the SCVWD in order to maximize dependability of long-term water supply resources.

Solids Waste Management

Policy C-RC 64: Countywide solid waste management efforts shall be guided by the hierarchy of strategies outlined below, emphasizing resource recovery in accordance with state law:

a. a. Source reduction and reuse,

b. b. Recycling and composting,

c. c. Transformation, and

d. d. Landfilling as final option.

Safety and Noise Chapter (Book A)

Water Supply and Quality

Policy C-HS 42: The long-term viability and safety of underground aquifers and groundwater systems countywide shall be protected to highest degree feasible.

Policy C-HS 47: Groundwater quality should be monitored to ensure the long-term integrity of countywide water resources.

Safety and Noise Chapter (Book B)

Water Supply and Quality

Policy R-HS 47: The long-term viability and safety of surface and groundwater supplies countywide shall be protected from contamination to the highest degree feasible.

Policy R-HS 48: To enhance the effectiveness of each agency's efforts to protect local surface and groundwater quality, the County should encourage

cooperation between the regional and local water agencies, sharing of information, and appropriate ongoing water quality monitoring efforts.

Parks and Recreation Chapter

Regional Parks and Public Open Space Lands

Strategy #1: Develop Parks and Public Open Space Lands

Policy C-PR 1: An integrated and diverse system of accessible local and regional parks, scenic roads, trails, recreation facilities, and recreation services should be provided.

Policy C-PR 2: Sufficient land should be acquired and held in the public domain to satisfy the recreation needs of current and future residents and to implement the trailside concept along our scenic roads.

Policy C-PR 3: The County's regional park system should:

a. utilize the county's finest natural resources in meeting park and open space needs;

b. provide a balance of types of regional parks with a balanced geographical distribution;

c. provide an integrated park system with maximum continuity and a clear relationship of elements, using scenic roads, bikeways, and trails as important linkages; and

d. give structure and livability to the urban community.

Policy C-PR 4: The public open space lands system should:

a. preserve visually and environmentally significant open space resources; and

b. provide for recreation activities compatible with the enjoyment and preservation of each site's natural resources, with trail linkages to adjacent and nearby regional park lands.

Policy GC-PR 5: Water resource facilities, utility corridors, abandoned railroad tracks, and reclaimed solid waste disposal sites should be used for compatible recreational uses, where feasible.

Strategy #2: Improve Accessibility

Policy C-PR 7: Opportunities for access to regional parks and public open space lands via public transit, hiking, bicycling, and equestrian trails should

be provided. Until public transit service is available, additional parking should be provided where needed.

Policy C-PR 8: Facilities and programs within regional parks and public open space lands should be accessible to all persons, regardless of physical limitations, consistent with available financial resources, the constraints of natural topography, and natural resource conservation.

Strategy #3: Balance Recreational and Environmental Objectives

Policy C-PR 9: The parks and recreation system should be designed and implemented to help attain open space and natural environment goals and policies.

Policy GC-PR 12: Parks and trails in remote areas, fire hazardous areas, and areas with inadequate access should be planned to provide the services o improvements necessary to provide for the safety and support of the public using the park and to avoid negative impacts on the surrounding areas.

Strategy #4: Facilitate Interjurisdictional Coordination

Strategy #5: Encourage Private Sector and Non-Profit Involvement

Trails and Pathways

Strategy #1: Plan for Trails

Strategy #2: Provide Recreation, Transportation, and Other Public Trail Needs in Balance with Environmental and Landowner Concerns

Policy C-PR 24: As provided for in the Resource Conservation Chapter, trails shall be located to recognize the resources and hazards of the areas they traverse, and to be protective of sensitive habitat areas such as wetlands and riparian corridors and other areas where sensitive species may be adversely affected.

Policy C-PR(i) 15: Prior to developing any new trail route for public use, prepare design and management plans that ensure provision of services necessary to provide for the safety and support of trail users and affected landowners, and respond to the unique safety and use concerns associated with highway safety, traffic operations, public transit, and businesses such as quality water source development, intensive agriculture, grazing, mining, railroads, and defense research and testing industries.

Strategy #3: Implement the Planned Trails Network

Strategy #4: Adequately Operate and Maintain Trails

Policy C-PR 30: Trails shall be temporarily closed when conditions become unsafe or environmental resources are severely impacted. Such conditions could include soil erosion, flooding, fire hazard, environmental damage, or failure to follow the specific trail management plan.

Policy C-PR(i) 19.6: Design trail access points to ensure that off-road motorized vehicles do not use trails except for maintenance and emergency purposes or wheelchair access.

Strategy #5: Establish Priorities

Strategy #6: Facilitate Inter-Jurisdictional Coordination

Policy C-PR 33.5: Public improvement projects, such as road widenings, bridge construction, and flood control projects, that may impact existing or proposed trails should be designed to facilitate provision of shared use.

Santa Clara County Integrated Waste Management Plan

The Santa Clara County CIWMP was completed and approved by the CIWMB in 1996. Each of the jurisdictions (cities and towns) in the county has completed implementation of the requirements of the CIWMP.

The jurisdictions and the County established the following countywide policies for reducing waste and implementing the programs identified in the CIWMP:

1. Similar programs selected by neighboring jurisdictions should be combined when and if this will result in the achievement of economies of scale in capitalizing and operating programs, and as long as such consolidation does not conflict with the interests of the jurisdictions.

2. The cities of the county will work together to ensure that new disposal and non-disposal facilities are appropriately sized, designed, and sited, in order to avoid duplication of effort, unnecessary expenditure of funds, and environmental degradation, and so that the specific integrated waste management needs of each jurisdiction are met.

3. In order to avoid confusion and duplication of effort, the Solid Waste Commission of Santa Clara County, advised by the Technical Advisory Committee, shall coordinate and oversee implementation of new countywide integrated waste management programs, administer programs selected for countywide implementation, and address issues of regional or countywide concern, as these arise. State and local legislation dealing with integrated waste management issues affecting Santa Clara County shall be monitored and countywide compliance with State and Federal requirements shall be encouraged.

Santa Clara County Parks and Recreation Department Strategic Plan (2018)

Santa Clara County has a long history of countywide park planning and development, overseen by the Santa Clara County Parks and Recreation Department (SCCPRD). Funded by a voter-approved Park Charter Fund, the department manages 28 parks spanning over 52,000 acres. In collaboration with Valley Water, SCCPRD enhances recreational access at various reservoirs and maintains over 70 miles of creek-side trails. The 2018 Strategic Plan outlines the department's vision, priorities, goals, and strategies for sustainable park management and future development.

Santa Clara Countywide Trails Prioritization and Gaps Analysis (2015)

The Santa Clara Countywide Trails Master Plan is a long-term strategy for developing and connecting regional trails across Santa Clara County. The 2015 update, called the Countywide Trails Prioritization and Gaps Analysis, evaluated progress since the plan's 1995 adoption, identified gaps, and prioritized future trail development. A more recent 2024 update refined the countywide trails map, incorporating changes in planning and infrastructure while engaging stakeholders and the public. The plan continues to guide efforts in expanding recreational opportunities and improving connectivity between natural spaces and communities (Santa Clara County 2024).

Campbell

Envision Campbell General Plan Update 2040 (2023)

Open Space, Parks, and Public Facilities Element

Open Space, Parks, and Recreation Facilities

Goal OSP-1: Regional open space, parks and recreation facilities that are useful, attractive, well maintained, and accessible to Campbell residents.

Policy OSP-1.1: Regional Open Space, Parks, and Recreation Facilities: Support efforts to enhance, enlarge and provide public access to regional open space, parks, and recreation facilities to meet the needs of Campbell residents.

Strategy OSP-1.1a: Santa Clara County Parks and Trails: Work with Santa Clara County and the Santa Clara Valley Water District to renovate and improve access to the Los Gatos Creek Trail and Los Gatos County Park.

Strategy OSP-1.1b: Santa Clara Valley Water District: Work with the Santa Clara Valley Water District to provide public access and improvement to the Groundwater Recharge Facilities in the City and explore the possibility of multiple-use recreational trail along San Tomas Aquino Creek.

Policy OSP-1.2: Regional Public Agency Lands: Utilize appropriately located surplus public agency lands for open space, parks, and recreation facilities as they become available.

Policy OSP-1.3: Facilities Improvement, Maintenance and Use Agreements with Regional Agencies: Utilize a variety of techniques to increase,

preserve or maintain regional open space facilities such as facilities improvement, joint maintenance or use agreements.

Strategy OSP-1.3a: Facilities Improvement, Maintenance and Use Agreements: Enter into facilities improvement, maintenance and us agreements with the County of Santa Clara, the Santa Clara Valley Water District and other public agencies to improve, maintain and increase access to these open space, park lands and facilities.

Goal OSP-2: Provide and maintain attractive, safe, clean, and comfortable open space, park land and recreational facilities and programs for maximum community use, benefit, and enjoyment.

Policy OSP-2.1: Park Standard: Strive to provide three acres of open space, park land and recreational facilities and one acre of school open space and recreational facilities for every 1,000 residents.

Policy OSP-2.2: Maintain and Renovate Existing Open Space, Park and Recreation Facilities: Maintain and renovate existing open space, park and recreation facilities to improve their usefulness, safety and appearance.

Goal OSP-4: Ensure that City streets function as open space and recreation assets in addition to their function as transportation corridors.

Public Facilities and Services

Goal OSP-6: Provide efficient and high-quality community services and facilities to meet the needs of City residents.

Policy OSP-6.1: Community Services: Ensure the delivery of efficient and high-quality City services.

Goal OSP-8: Provide high-quality educational facilities and services for all students.

Sewer, Storm Drainage and Wastewater

Goal OSP-9: Properly functioning storm drainage system.

Policy OSP-9.1: Drainage Facilities: Ensure that drainage facilities convey storm runoff without polluting local watercourses.

Strategy OSP-9.1d: New Construction: Require new construction to utilize site preparation, grading and foundation designs that provide erosion control to prevent sedimentation and contamination of streams.

Strategy OSP-9.1e: Postconstruction Pollution Control Measures: Require new construction projects to include postconstruction pollution control measures in site designs to prevent pollution.

Policy OSP-9.2: NPDES: Comply with the federal Clean Water Act requirements for National Pollutant Discharge Elimination System permits.

Goal OSP-10: Ensure efficient sewer and wastewater treatment.

Policy OSP-10.1: Sewer and Wastewater Facilities: Ensure that sewer and wastewater facilities meet the needs of Campbell's residents.

Health and Safety Element

Fire Safety

Goal HS-4: Reduced risk to life and property from fires.

Policy HS-4.1: Reduction of Fire Hazards: Regulate land use and development to diminish fire hazards.

Strategy HS-4: Appropriate Response Times: Work with the Santa Clara County Fire Department to maintain appropriate response times within the City for fire, medical and other related emergencies.

Hazardous Materials and Waste

Goal HS-7: Minimal exposure to hazardous materials.

Policy HS-7.1: Hazardous Materials Storage, Use and Transport: Ensure that storage, use and transport of hazardous materials are regulated properly.

Strategy HS-7.1a: Hazardous Materials: Require storage, use and transport of hazardous materials to comply with local, State, and federal safety standards.

Strategy HS-7.1b: Hazardous Materials and Development Project Review: Review all propose development projects that manufacture, use or transport hazardous materials for compliance with the County Hazardous Waste Management Plan.

Conservation and Natural Resources Element

Waste Management and Recycling

Goal CNR-8: Reduce the generation of solid waste volume throughout the City.

Goal CNR-9: Maximize source reduction and recycling to reduce the amount of solid waste sent to the landfill and extend the life of the landfill.

Policy CNR-9.1: Source Reduction and Recycling Efforts: Participate in source reduction and recycling efforts.

Strategy CNR-9.1a: Reduced Solid Waste Disposal Volume: Reduce solid waste disposal volume to meet the State-mandated level through source reduction, recycling, composting and yard waste programs.

Strategy CNR-9.1b: Integrated Waste Management Act of 1989: Fully implement the California Integrated Waste Management Act of 1989.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Health and Safety

Goal HS-1: Reduce hazard risks through regional coordination and mitigation planning.

Policy HS-1.1: Regional Hazard Risk Reduction Planning: Coordinate with Santa Clara County and local agencies to implement the Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) for Santa Clara County.

Infrastructure

Goal INF-4: Implement best practices in stormwater management to reduce demand on the stormwater network, reduce soil erosion, and reduce pollution into reservoirs and the Bay.

Policy INF-4.1: Planning and Management: Create plans and operational policies to develop and maintain an effective and efficient stormwater system.

Strategy INF-4.1.1: Management: Reduce the demand on storm drain capacity through implementation of programs that meet and even exceed on-site drainage requirements.

Goal INF-5: Ensure that the city's wastewater system continues to meet current and future needs.

Policy INF-5.1: Infrastructure: Ensure that the infrastructure plans for Cupertino's wastewater system providers continue to meet the City's current and future needs.

Strategy INF-5.1.2: Development: Require developers to pay their fair share of costs for, or in some cases construct, infrastructure upgrades to ensure that service levels are met.

Goal INF-7: Ensure that the city meets and exceeds regulatory waste diversion goals by working with providers, businesses, and residents.

Goal INF-8: Develop and enhance programs that reduce, reuse and recycle waste.

Policy INF-8.1: Meet or exceed Federal, State and regional requirements for solid waste diversion through implementation of programs.

Strategy INF-8.1.6: Construction Waste: Encourage recycling and reuse of building materials during demolition and construction of City, agency, and private projects.

Strategy INF-8.1.7: Recycled Materials. Encourage the use of recycled materials and sustainably harvested materials in City, agency and private projects.

Recreation, Parks, and Community Services

Goal RPC-1: Create a full range of park and recreational resources and preserve natural resources.

Policy RPC-1.2: Parkland Standards: Continue to implement a parkland acquisition and implementation program that provides a minimum of three acres per 1,000 residents.

Goal RPC-2: Distribute parks and open space throughout the community and provide services, a safe and easy access, to all residents and workers.

Policy RPC-2.1: Parkland Acquisition: The City's parkland acquisition strategy should be based upon three broad objectives:

- Distributing parks equitably throughout the City;
- Connecting and providing access by providing paths, improved pedestrian and bike connectivity and signage; and
- Obtaining creek lands and restoring creeks and other natural open space areas, including strips of land adjacent to creeks that may be utilized in creating buffer areas, trails, and trail amenities.

Policy RPC-2.5: Range of Park Amenities: Provide parks and recreational facilities for a variety of recreational activities.

Goal RPC-3: Preserve and enhance access to parks that have significant natural resources.

Goal RPC-4: Integrate parks and public facilities within neighborhoods and areas.

Goal RPC-8: Cooperate with school districts to share facilities and meet community needs.

Gilroy

City of Gilroy 2040 General Plan (2020)

Public Facilities and Services Element

General Public Facilities and Services

Goal PFS-1: Provide the highest level of public facilities and services feasible, consistent with the City's fiscal resources, to meet the needs of current and future residents and businesses.

Water Supply and Delivery

Goal PFS-3: Maintain the City's water system to meet the needs of existing and future development while improving water system efficiency.

Policy PFS 3.3: Water Agency Coordination. Advocate with Valley Water, regional agencies, and other public and private entities to provide water for the existing community and future planned development.

Policy PFS 3.5: Water Quality. Ensure the provision of healthy, safe water for all users in Gilroy through facilities, policies, programs, and regulations.

Wastewater Collection, Treatment, and Disposal

Goal PFS-4: Maintain the City's wastewater collection, treatment, and disposal system to meet the needs of existing and future development anticipated in the Gilroy 2040 General Plan.

Policy PFS 4.2: Wastewater Treatment and Disposal Capacities. Provide for and maintain adequate wastewater treatment and disposal capacities to meet the needs of existing users and support the buildout of the Gilroy 2040 General Plan.

Policy PFS 4.4: Effective Wastewater Treatment. Provide treatment and disposal facilities that protect groundwater and other natural resources from contamination.

Policy PFS 4.6: Recycled Water. Coordinate with Valley Water to continue to maximize the production and use of recycled water.

Storm Drainage

Goal PFS-3: Maintain an effective storm drainage system to accommodate runoff, prevent property damage due to flooding, and improve environmental quality.

Policy PFS 5.2: Storm Collection System. Provide and maintain a storm collection system to convey stormwater to creeks and channels and to reduce the potential for localized flooding.

Solid Waste and Recycling

Goal PFS-6: Reduce the amount of waste entering regional landfills through an effective waste management program.

Policy PFS 6.3: Solid Waste Diversion: Comply with State goals regarding reduction of solid waste disposal, including calculated disposal rate standards.

Policy PFS 6.9: Solid Waste Diversion: Continue to require demolition, remodeling, and major new development projects to salvage or recycle asphalt and concrete and all other nonhazardous construction and demolition materials to the maximum extent practicable.

Policy PFS 6.10: Regional Coordination. Coordinate with and support regional efforts to develop and implement effective waste management strategies.

Utilities

Goal PFS 8: Provide for the current and future energy and telecommunications needs of Gilroy.

Policy PFS 8.1: Provision of Utilities. Work with public, quasi-public, and private utility providers as practicable to provide adequate levels of service to city residents.

Law Enforcement

Goal PFS-9: Provide excellent public safety services in partnership with the community.

Policy PFS 9.2: Standards of Service. Provide and maintain police services that are adequate in staffing, equipment, and resources to respond to emergencies and calls for service as the city continues to grow. Measurable standards of levels of service shall be established by the City Council in the biennial budget and be aligned with National Best Practices. City staff shall annually report on actual performance compared against the established standards.

Fire Protection and Emergency Medical Services

Goal PFS-10: Provide for public health and safety by offering high quality fire and emergency-response services.

Policy PFS 10.1: Standards of Service. Provide and maintain fire services that are adequate in staffing, equipment, and resources to respond to emergencies and calls for service as the city continues to grow. Measurable standards of levels of service shall be established by the City Council in the biennial budget and be aligned with National Best Practices. City staff shall annually report on actual performance compared against the established standards.

Parks and Recreation

Park Development and Maintenance

Goal PR-1: Provide a comprehensive and coordinated system of convenient, attractive, and high-quality parks to meet the current and future recreation needs of Gilroy residents.

Policy PR 1.1: Complete System. Develop and maintain a complete system of parks that provide opportunities for both passive and active recreation.

Policy PR 1.2 Healthy Community. Encourage Gilroy residents to be healthier and more active by providing park and recreation facilities to meet the needs of all residents.

Policy PR 1.4: Park Land Standard. Maintain the City's established standard of five acres of developed park land per thousand population.

a) This standard includes neighborhood/school parks, community and community/school parks, sports parks, trails/linear parkways, and special use facilities.

b) Park preserves and limited active recreation use areas are valued at five percent of their total acreage toward meeting this standard.

c) Golf courses, non-accessible open spaces, and private recreational facilities are not included in this standard. School lands are not included unless there is a long-term lease agreement for their use as City recreational facilities.

Policy PR 1.5: Facilities and Services Timing. Ensure that the development of parks, trails, and community and recreation facilities and services keeps pace with development and growth within the city.

Goal PR-3: Coordinate with local and regional organizations and agencies to provide the highest quality parks and recreation facilities and programs to Gilroy residents.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Infrastructure and Waste Development Element

Water Supply

Goal 1: Support the provision of clean, healthful water in quantities sufficient to satisfy current and projected domestic and commercial needs in Los Altos.

Policy 1.4: Review development proposals to determine whether adequate water pressure exists for existing and new development.

Sewer Service

Goal 2: Support the provision of sewage collection and treatment services to satisfy current and projected needs in Los Altos.

Policy 2.2: Review development proposals to ensure that if a project is approved, adequate sewage collection and treatment capacity is available to support such proposals.

Utilities

Goal 4: Maintain adequate sewer, gas, water, electric power, and communications systems and facilities in Los Altos.

Solid Waste Disposal

Goal 5: Ensure long-term solid waste disposal capacity for Los Altos.

Policy 5.2: Reduce the total volume of the solid waste stream.

Open Space, Conservation, and Community Facilities Element

Park and Recreation Facilities and Programs

Goal 3: Expand recreation programs and facilities for all ages using City and non-City sites.

Goal 4: Ensure proper maintenance of parks, open space, and public facilities.

Policy 4.1: Provide adequate level of maintenance for City parks open space, and public property to ensure safety, aesthetics, and recreational enjoyment for Los Altos residents.

Community Facilities and Services

Goal 6: Ensure an adequate level of fire protection and police protection within Los Altos.

Policy 6.1: Promote community order b preventing criminal activity enforcing laws, and meeting community service demands.

Policy 6.2: Provide community-oriented policing services that are responsive to citizen needs.

Policy 6.3: Provide response times for police and fire protection services emergencies that are comparable to similar jurisdictions in Santa Clara County.

Policy 6.4: Continue cooperative mutual aid agreements with nearby jurisdictions to ensure rapid and sufficient response to emergency situations.

Goal 7: Work with local school districts and other educational organizations to ensure a high-quality public education system.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update 2007 [2007]

Land Use Element

Utilities

Goal 4: Provide adequate, reliable utilities and urban services that will protect the health and safety of all residents, while minimizing environmental and aesthetic impacts on the community.

Open Space and Recreation Element

Recreation Areas and Facilities

Goal 2: Provide recreation areas and facilities that meet the neighborhood and community needs of Town residents.

Policy 2.3: Public recreation areas shall be specifically adapted to meet local needs and interests.

Program 2.3: Continue to evaluate the recreation needs of the community and the availability of resources.

Parks and Recreation Standards

1. All residential areas should have public land available for recreation within approximately one-half to one-mile distances. This requirement may be met by Open Space Preserve land in public ownership and by public recreation areas.

2. The acreage of public land available for recreation shall be not less than five percent of the residential area of the Town. These areas should be located or distributed as equitably as possible throughout the Town.

Goal 3: Provide recreation programs that meet neighborhood and community needs of Town residents.

Policy 3.1: The Town shall support continued and expanded recreation programs for Los Altos Hills residents of all ages.

Policy 3.2: Recreation activities and programs shall be located and designed to be compatible with the long-term sustainability of each site's natural resources, with particular attention to the preservation of unique, rare, or endangered resources (including historic and archeological sites, as well as plant and animal species).

Safety Element

Law Enforcement

Goal 5: Minimize the risk of personal injury and property damage due to crime.

Policy 5.1: Continue to provide law enforcement services that maintain the community's low crime rate and ensure a high level of public safety.

Disaster Response

Goal 7: Provide quick, coordinated response to emergencies.

Policy 7.3: In times of emergency, evacuation routes shall be determined and implemented by fire protection and law enforcement personnel.

Waste Reduction and Recycling

Goal 9: Reduce the amount of solid waste generated in Los Altos Hills.

Policy 9.1: Promote source reduction and recycling throughout the community.

Town of Los Gatos

Los Gatos 2040 General Plan

Public Facilities, Services, and Infrastructure Element

Water and Water Conservation

Goal PFS-1: Ensure an adequate water supply for the Town's human, wildlife, and plant populations.

Wastewater

Goal PFS-2: Meet all wastewater treatment demands and Federal and State regulations.

Policy PFS-2.1: West Valley Sanitation District. Support WVSD to maintain wastewater conveyance, treatment, and disposal infrastructure in good working condition, in order to supply municipal sewer service to the Town's residents and businesses.

Solid Waste Disposal and Recycling

Goal PFS-4: Promote recycling and reuse as well as reduction in demand.

Policy PFS-4.1: Recycling of Reusable Materials. Require the use of and recycling of reusable materials from residential, commercial, and construction/renovation activities, when feasible.

Goal PFS-5: Conserve landfill space.

Fire Protection

Goal PFS-19: Provide adequate fire protection and emergency medical response services to Town residents and businesses.

Policy PFS-19.1: First Response Travel Time. Work with the SCCFD to ensure that first response travel time is maintained and enhanced where possible.

Policy PFS-19.4: Emergency Vehicle Accessibility. New development shall be accessible to emergency vehicles and shall not impede the ability of service providers to provide adequate emergency response.

Open Space, Parks, and Recreation Element

Parks and Recreation

Goal OSPR-6: Provide recreational facilities that address the needs of the community.

Policy OSPR-6.2: Recreational Amenities and Programs. Encourage the development of amenities and programs in parks and other recreational facilities that cater to a variety of ages and address the needs of families.

Policy OSPR-6.7: Town Park Standards. Provide five acres of parkland per 1,000 population, in order to meet the community needs for active and passive recreation.

Policy OSPR-7: Create and maintain open space areas and parks that complement and enhance natural habitats and neighborhoods.

Policy OSPR-7.1: Town Parks and Trails. Promote a system of Town parks and trails.

Policy OSPR-7.2: Quasi-Public Areas. Maximize the use of public utility easements, flood control channels, school grounds, and other quasi-public areas for recreational uses and playfields.

Policy OSPR-7.8: Park Visibility. Ensure all parks are visible from a public right-of-way whenever possible and are clear of unnecessary visual impediments (such as vegetation) that reduce visual connections and observation.

Milpitas

Milpitas 2040 General Plan (2021)

Parks, Recreation, and Open Space

Park and Trail System

Goal PROS-1: Provide a diversified and high-quality public park and trail system that provides recreational opportunities for all residents.

Policy PROS 1-1: Provide a park and recreation system that is equitably distributed, safe, accessible, and designed to serve the needs of all residents of the community.

Policy PROS 1-2: Develop and maintain a high-quality system of parks, trails, and recreation facilities to create diverse opportunities for passive and organized recreation.

Policy PROS 1-3: Achieve and maintain a minimum overall citywide ratio of 5 acres of park land for every 1,000 residents outside of the City's adopted Specific Plan areas. Within adopted Specific Plan areas, achieve and maintain the parks standards and ratios specified in the Specific Plan, with an emphasis on publicly accessible spaces and facilities.

Policy PROS 1-7: Design parks to enhance public safety by providing visibility of all areas both to and from the street, adequate lighting, and access for public safety responders.

Policy PROS 1-8: Expand, renovate, and maintain high quality recreation facilities, programs, and services to accommodate existing and future needs; encourage traditional and non-traditional recreation; and support active and passive recreation, wellness, historic assets, cultural arts,

environmental education, conservation, accessibility, inclusion, diversity, safety, and new technology that equitably serves the most vulnerable populations of the community.

Policy PROS 1-9: Prioritize funding and City resources to improve the condition, maintenance, and upkeep of existing City parks and recreational facilities.

Policy PROS 1-11: Pursue opportunities for cooperation and partnerships with other agencies to develop and enhance publicly accessible trails and linear parks along local drainages, creeks, and utility corridors.

Policy PROS 1-14: Further expand public access to a variety of park and recreational facilities through the pursuit of joint use agreements with entities and organizations that control existing non-city owned open space lands, such as public and private schools, Santa Clara Valley Water District, Santa Clara County and other public agencies, private entities and businesses and nonprofit groups.

Recreational Opportunities

Goal PROS-2: Provide recreational opportunities that meet the needs of all residents, especially the most vulnerable and underserved members of the community.

Policy PROS 2-3: Ensure that the City continues to offer a wide range of programs to serve diverse populations of all ages, abilities, income levels and cultural backgrounds. Develop programs, activities, and facilities that appeal to a broad audience, including but not limited to youth, young adults, and seniors and those of varying ethnicities, backgrounds, and abilities.

Safety Element

Emergency Services

Goal SA-4: Maintain a safe community by providing, efficient and high quality police, fire, and emergency services.

Policy SA 4-9: Ensure that fire and emergency medical services meet existing and future demand by maintaining a response time of four minutes or less for all urban service areas.

Utilities and Community Services Element

General

Goal UCS-1: Maintain and improve Milpitas' Infrastructure to provide safe, reliable, and high-quality services.

Policy USC 1-1: Provide adequate public infrastructure (i.e., street, sewer, water, and storm drain systems) to meet the needs of existing and future development.

Water

Goal UCS-2: Provide an adequate, reliable, and safe water supply, storage, and distribution system to meet the needs of existing and projected development.

Policy UCS 2-1: Ensure the water system and supply adequately meets the needs of existing and future development and is utilized in a sustainable manner.

Policy UCS 2-5: Reduce potable water use and increase water conservation.

Sewer

Goal UCS-3: Maintain an adequate sewage collection, treatment and disposal system to meet the needs of existing and projected development.

Policy UCS 3-1: Ensure safe and reliable wastewater collection and treatment infrastructure to serve existing and future development.

Solid Waste

Goal UCS-5: Maintain adequate recycling and solid waste service for all users.

Policy UCS 5-4: Encourage residential, commercial, and industrial recycling and reuse programs and techniques.

Policy UCS 5-6: When feasible, minimize the potential impacts of waste collection, transportation, and the location of potential disposal facilities upon the residents of Milpitas.

Electricity and Natural Gas

Goal UCS-6: Ensure adequate, reliable electric and natural gas service is available to all users..

Telecommunications

Goal UCS-7: Ensure adequate telecommunications service is available to all users.

Policy UCS 7-1: Work cooperatively with utility providers to ensure the provision of adequate telecommunications services and facilities to serve the needs of existing and future residents and businesses. The City shall place emphasis on improving the quality of service in underserved areas.

Schools, Libraries, and Other Public Facilities

Goal UCS-8: Enhance the quality of life for all city residents through the provision of cultural and social resources including quality schools, libraries, medical, and other community services and facilities.

Monte Sereno

Monte Sereno General Plan (2008)

Health and Safety Element [2008]

Goal HS-1: Prevent and reduce risks to property and protect residents from urban and wildfire hazards.

Policy HS-1.1: Cooperate with Central Fire District in providing fire protection facilities needed to maintain or improve existing fire protection standards.

Open Space and Conservation Element

Goal OSC-8: Reduce the generation of solid waste in Monte Sereno.

Policy OSC-8.5: Encourage use of recycled-content construction materials.

Goal OSC-2: Provide adequate parks and recreational facilities for Monte Sereno residents.

Policy OSC-2.1: Work with other jurisdictions to provide parkland and recreational facilities for Monte Sereno residents.

Public Services and Facilities Element

Goal PS-1: Provide residents with quality services in a cost-effective manner.

Policy PS-1.2: Periodically review public services to ensure the cost-effective provision quality services for Monte Sereno residents.
Goal PS-2: Coordinate with governmental agencies and other outside providers to deliver quality public services.

Goal PS-4: Ensure the highest quality schools, libraries, police and fire services for Monte Sereno residents.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Healthy Community Element

Schools

Goal HC-1: Coordinated urban and school development.

Policy HC-1.1: Neighborhood Schools. Coordinate community development and school development to promote neighborhood schools, which educate neighborhood children and serve as a community resource facility.

Policy HC-1.3: Quality Education. Cooperate with the City of San Jose, Santa Clara County, and the Morgan Hill Unified School District to ensure a high-

quality education experience by providing adequate and safe school facilities, preventing overcrowding, and providing school locations convenient to the population served.

Policy HC-1.8: Park Coordination. Work with the Morgan Hill Unified School District to locate parks and schools together to optimize their use as community facilities. (South County Joint Area Plan 4.10)

Parks, Recreation, and Trails

Goal HC-3: Usable, complete, well-maintained, safe, and high-quality activities and amenities, including active and passive parks and recreational facilities, community gardens, and trails that are accessible to all ages, functional abilities, and socio-economic groups.

Policy HC-3.1: Universal Recreation. Provide recreational facilities and programs that meet the needs of all Morgan Hill residents, including seniors, youth, low-income residents, and citizens with disabilities.

Policy HC-3.2: Parkland Standard. Strive to provide park land that meets the standards set in the current Parks, Facilities, and Recreation Master Plan by acquiring and developing parks and recreation facilities and developing joint use agreements with other agencies and organizations that provide community recreation facilities.

Policy HC-3.7: Maintenance. Maintain parks and recreational facilities consistent with established standards.

Natural Resources and Environment Element

Water Supply and Quality

Goal NRE-7: Conservation of water resources.

Goal NRE-8: Protection of water quality from contamination associated with urbanization.

Goal NRE-9: Cooperative efforts to ensure regional water quality.

Policy NRE-9.1: Interjurisdictional Coordination. Maintain close coordination with the following agencies and organizations which share jurisdiction and interest relative to South County's water supply and water quality: the Regional Water Quality Control Boards, Santa Clara Valley Water District, Santa Clara County, City of Gilroy Planning Department, and San Martin Planning Committee. (South County Joint Area Plan 10.02)

Safety, Services, and Infrastructure Element

Police and Fire

Goal SSI-11: Efficient police, fire, and emergency medical response and services, and access to local medical facilities.

Policy SSI-11.3: Medical Services. Encourage provision of a full range of medical services in the city, including an acute care hospital.

Emergency Response

Goal SSI-12: Reduce risk to life and property associated with emergencies and natural and manmade disasters.

Policy SSI-12.4: Maintenance of Emergency Access Routes. Require that emergency access routes be kept free of traffic impediments.

Water Supply

Goal SSI-14: High quality water resources managed effectively.

Policy SSI-14.1: Efficient Water Management. Manage the supply and use of water more efficiently through appropriate means, such as watershed protection, percolation, conservation, and reclamation. (South County Joint Area Plan 7.00)

Policy SSI-14.4: Drought Planning. Encourage water agencies to develop and maintain drought contingency plans, including emergency water connections and related measures to ensure adequate water during drought.

Policy SSI-14.6: Well Pumping. Support cooperation among all jurisdictions and agencies pumping water from wells in order to manage the aquifer to preserve the natural ecology of the region, secure the aquifer's utility as a water resource, and ensure the water's quality. (South County Joint Area Plan 7.04)

Policy SSI-14.7: Water District Programs. Encourage the Santa Clara Valley Water District to continue developing programs to assure effective management of water resources, such as well monitoring, percolation of imported water, reclamation, and conservation. (South County Joint Area Plan 7.07)

Policy SSI-14.8: Sufficient Supply. Ensure that new development does not exceed the water supply. (South County Joint Area Plan 7.08)

Policy SSI-14.9: Well Monitoring. Continue to monitor wells and provide the results to the Santa Clara Valley Water District which would coordinate the data and make it available to all jurisdictions and agencies. (South County Joint Area Plan 8.14)

Goal SSI-16: Minimized adverse effects on property, natural resources, and ground and surface water quality from stormwater runoff.

Wastewater

Goal SSI-15: Efficient, effective, and sustainable wastewater treatment.

Solid Waste

Goal SSI-17: Reduced generation of solid waste and increased diversion of waste from landfills.

Policy SSI-17.1: Waste Diversion. Maximize reuse, recycling, and composting citywide to reduce the amount of waste disposed of in landfills.

Telecommunications

Goal SSI-18: State-of-the-art telecommunication services for all segments of the community to foster fiscal and environmental sustainability, support an innovative economy, and meet the needs of the community.

Mountain View

Mountain View 2030 General Plan (2012)

Parks, Open Space and Community Facilities

Parks and Open Space

Goal POS-1: An expanded and enhanced park and open space system.

Policy POS 1.1: Additional parkland. Expand Park and open space resources to meet current City standards for open space acreage and population in each neighborhood.

Goal POS-2: Parks and public facilities equitably distributed throughout the community and accessible to residents and employees.

Policy POS 2.1: Distribution of parks. Give priority for park acquisition to the Planning Areas identified in the Parks and Open Space Plan.

Policy POS 2.5: Schools. Pursue strategies for preserving its park and open space areas if a school site is declared surplus by the school district.

Policy POS 2.6: Diverse park amenities. Design parks to address a range of activities for diverse populations.

Goal POS-4: Parks and public facilities that are well designed and integrated with the surrounding neighborhood.

Policy POS 4.2: Park design. Implement high-quality park amenities and design.

Goal POS-5: Cooperation between the City and local school districts to meet shared open space, recreation and education needs.

Policy POS 5.3: School facilities. Ensure school facilities are constructed to serve community needs to the extent allowed by state law.

Policy POS 5.4: School facility needs. Collaborate with local school districts on their facility needs and provide information on development and growth trends.

Infrastructure and Conservation Element

Water, Wastewater and Stormwater

Goal INC-4: A sustainable water supply with sufficient supply and appropriate demand management.

Policy INC 4.1: Water Supply. Maintain a reliable water supply.

Goal INC-5: Effective and comprehensive programs utilizing water use efficiency, water conservation and alternative water supplies to reduce per capita potable water use.

Policy INC 5.2: Citywide Water Conservation. Reduce water waste and implement water conservation and efficiency measures throughout the city.

Goal INC-6: A coordinated wastewater collection system that protects the community's health and safety.

Policy INC 6.1: Citywide wastewater. Ensure high-quality wastewater collection services and a well-maintained wastewater system.

Telecommunications

Goal INC-9: A comprehensive network of telecommunication services that meets community needs.

Solid Waste and Recycling

Goal INC-10: Reduced waste through supply-chain management, advocacy and outreach to reduce waste.

Policy INC 10.3: Source reduction. Encourage and promote source reduction behavior such as utilizing reusable, returnable and repairable goods.

Policy INC 10.4: Construction waste reuse. Encourage building deconstruction and reuse and construction waste recycling.

Public Safety Element

Police and Fire Service

Goal PSA-1: A high level of community safety with police, fire and emergency response services that meet or exceed industry-accepted service standards.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Community Services and Facilities Element

Goal C-1: Deliver community services effectively and efficiently.

Policy C-1.3.1: Develop and implement a plan to collect and analyze data on demographics, use of community service facilities and needs of the community as related to parks, open spaces, recreation, arts, and culture.

Policy C-1.4: Promote City parks, open spaces, recreational facilities, libraries, classes and cultural activities for community members recognizing that these facilities and services build and strengthen community.

Goal C-3: Recognize the intrinsic value and everyday importance of our parks and community centers, libraries, civic buildings, and cultural assets by investing in their maintenance and improvement.

Policy C-3.3: Maintain and enhance existing park and recreation facilities consistent with the adopted Parks, Trails, Open Space and Recreation Master Plan, as amended, which is incorporated here by reference.

Program C3.31: Periodically evaluate how parks and recreational facilities are being used and develop strategies for improving their use overall.

Goal C-4: Plan for a future in which our parks, open spaces, libraries, public art and community facilities thrive and adapt to the growth and change of Palo Alto.

Policy C-4.6: Use the National Recreation and Park Association Standards as guidelines for locating and developing new parks. These guidelines are as follows:

- Neighborhood parks should be at least two (2) acres in size, although sites as small as ½-acre may be needed as supplementary facilities. The maximum service area radius should be ½-mile. Two acres of neighborhood park land should be provided for each 1,000 people.

- District parks should be at least five (5) acres in size. The maximum service area radius should be one (1) mile. Two acres of district park land should be provided for each 1,000 people.

Safety Element

Fire Protection and Awareness

Policy S-2.13: Minimize exposure to wildland and urban fire hazards through rapid emergency response, proactive code enforcement, public education programs, use of modern fire prevention measures and adequate emergency management preparation.

Policy S-2.15: Provide emergency fire and medical services consistent with the response time standards set forth in the Fire Department's annual budget.

Solid Waste

Policy S-3.8: Strive for 95 percent landfill diversion by 2030, and ultimately zero waste, by enhancing policies and programs for waste reduction, recycling, composting and reuse.

Policy S-3.9: Reduce solid waste generation through requiring salvage and reuse of building materials, including architecturally and historically significant materials.

San José

Envision San José 2040 General Plan (2011)

Environmental Leadership Element

Recycling/Zero Waste

Goal MS-5: Divert 100% of waste from landfills by 2022 and maintain 100% diversion through 2040.

Policy MS-5.1: Encourage use of reusable products.

Policy MS-5.2: Assess the opportunities for implementing material bans at landfills.

Water Supply, Conservation, Recycling, and Quality

Goal MS-17: Responsible Management of Water Supply. Demonstrate environmental leadership through responsible and fiscally and environmentally sustainable management of water to restore our environment, enhance our quality of life and provide an adequate water supply to meet the needs of our community now and in the future.

Goal MS-18: Water Conservation: Continuously improve water conservation efforts in order to achieve best in class performance. Double the City's annual water conservation savings by 2040 and achieve half of the Water District's goal for Santa Clara County on an annual basis.

Goal MS-20: Water Quality. Ensure that all water in San Jose is of the highest quality appropriate for its intended use.

Policy MS-20.3: Protect groundwater as a water supply source through flood protection measures and the use of stormwater infiltration practices that protect groundwater quality. In the event percolation facilities are modified for infrastructure projects, replacement percolation capacity will be provided.

Goal ER-8: Stormwater. Minimize the adverse effects on ground and surface water quality and protect property and natural resources from stormwater runoff generated in the City of San José.

Policy ER-8.4: Assess the potential for surface water and groundwater contamination and require appropriate preventative measures when new development is proposed in areas where storm runoff will be directed into creeks upstream from groundwater recharge facilities.

Goal ER-9: Water Resources. Protect water resources because they are vital to the ecological and economic health of the region and its residents.

Policy ER-9.3: Utilize water resources in a manner that does not deplete the supply of surface or groundwater or cause overdrafting of the underground water basin.

Policy ER-9.4: Work with the SCVWD to preserve water quality by establishing appropriate public access and recreational uses on land adjacent to rivers, creeks, wetlands, and other significant water courses.

Policy ER-9.5: Protect groundwater recharge areas, particularly creeks and riparian corridors.

Water Supply, Sanitary Sewer and Storm Drainage

Goal IN-3: Provide water supply, sanitary sewer, and storm drainage infrastructure facilities to meet future growth planned within the City, to assure high-quality service to existing and future residents, and to fulfill all applicable local, State and Federal regulatory requirements.

Wastewater Treatment and Water Reclamation

Goal IN-4: Provide, maintain, and operate wastewater treatment and water reclamation facilities to support City development goals and planned future growth through the implementation of innovative technologies and operational practices and to fulfill all applicable local, State and federal regulatory requirements.

Policy IN-4.2: Maintain adequate operational capacity for wastewater treatment and water reclamation facilities to accommodate the City's economic and population growth.

Policy IN-4.6: Encourage water conservation and other programs which result in reduced demand for wastewater treatment capacity.

Solid Waste – Materials Recovery/Landfill

Goal IN-5: Develop and maintain materials recovery and landfill facilities to meet community needs, advance the City's Zero Waste goals and to comply with applicable regulatory requirements.

Policy IN-5.1: Monitor the continued availability of long-term collection, transfer, recycling and disposal capacity to ensure adequate solid waste capacity. Periodically assess infrastructure needs to support the City's waste diversion goals. Work with private MRF and Landfill operators to provide facility capacity to implement new City programs to expand recycling, composting and other waste processing.

Policy IN-5.3: Use solid waste reduction techniques, including source reduction, reuse, recycling, source separation, composting, energy recovery and transformation of solid wastes to extend the life span of existing landfills and to reduce the need for future landfill facilities and to achieve the City's Zero Waste goals.

Policy IN-5.15: Expand the capacity of existing landfill sites as the preferred method for increasing the City's landfill capacity and monitor the continued availability of recycling, resource recovery and composting capacity to ensure adequate long-term capacity.

Telecommunications

Goal IN-6: Support the provision of state-of-the-art telecommunication services for households, businesses, institutions, and public agencies throughout the city to foster fiscal sustainability, an innovative economy, support environmental leadership, meet the needs of quality neighborhoods and advance other Envision General Plan goals.

<u>Parks, Open Space, and Recreation Element</u>

Policy PR-1.1: Provide 3.5 acres per 1,000 population of neighborhood/community serving parkland through a combination of 1.5 acres of public park and 2.0 acres of recreational school grounds open to the public per 1,000 San José residents.

Policy PR-1.2: Provide 7.5 acres per 1,000 population of citywide/regional park and open space lands through a combination of facilities provided by the City of San José and other public land agencies.

Policy PR-1.6: Where appropriate and feasible, develop parks and recreational facilities that are flexible and can adapt to the changing needs of their surrounding community.

Policy PR-1.8: Enhance existing parks and recreation facilities in built-out areas through new amenities and other improvements to ensure that residents' needs are being met.

Policy PR-1.11: Develop an integrated parks system that connects new and existing large parks together through a network of interconnected trails and/or bike lanes/routes.

Goal PR-2: Contribute to a Healthful Community. Build healthful communities through people, parks, and programs by providing accessible recreation opportunities that are responsive to the community's health and wellness needs.

Policy PR-2.3: Design and construct new parks, trails, and amenities in a manner that promotes their safe utilization, and which allows access to each type of recreation experience for people of all abilities to the maximum extent possible.

Goal PR-3: Provide an Equitable Park System. Create a balanced park system that provides all residents access to parks, trails, open space, community centers, dog parks, skate parks, aquatics facilities, sports fields, community gardens, and other amenities.

Policy PR-3.1: Provide equitable access to parks, trails, open space, community centers, dog parks, skate parks, aquatics facilities, sports fields, community gardens, and other amenities to the greatest extent feasible in order to provide a high quality of life for our residents.

Goal PR-5: Grand Parks. Develop and promote a series of grand parks to act as focal points for the City, its residents, and its visitors.

Policy PR-5.2: Promote a series of parks as the City's grand parks that host events, attract visitors, and strengthen San José's overall identity.

Quality of Life Element

Police and Fire Protection

Goal ES-3: Provide high-quality law enforcement and fire protection services to the San José community to protect life, property and the environment through fire and crime prevention and response. Utilize land use planning, urban design and site development measures and partnerships with the community and other public agencies to support long-term community health, safety, and well-being.

Policy ES-3.1: Provide rapid and timely Level of Service response time to all emergencies:

1. For police protection, use as a goal a response time of six minutes or less for 60 percent of all Priority 1 calls, and of eleven minutes or less for 60 percent of all Priority 2 calls.
2. For fire protection, use as a goal a total response time (reflex) of eight minutes and a total travel time of four minutes for 80 percent of emergency incidents.
3. Enhance service delivery through the adoption and effective use of innovative, emerging techniques, technologies, and operating models.

4. Measure service delivery to identify the degree to which services are meeting the needs of San José's community.
5. Ensure that development of police and fire service facilities and delivery of services keeps pace with development and growth in the city.

Activate San José Strategic Plan (2020)

The Activate San José Strategic Plan is a 20-year initiative to enhance parks, recreation programs, and community services, making the city more inclusive, healthy, and vibrant. Guided by principles of stewardship, nature, equity, identity, and public life, the plan ensures sustainable growth and accessibility for all residents. It aligns with the Envision San José 2040 General Plan, which balances economic, housing, transportation, and environmental priorities to support the city's long-term development.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

Parks, Open Space, and Recreation Goals and Policies

Goal 5.9.1-G1: Ample facilities for physical activities that promote community health.

Goal 5.9.1-G2: Parks, trails and open space located within a ten-minute walk to residential neighborhoods and employment centers.

Goal 5.9.1-G4: New Parks, open space and recreation provided with new development so that existing facilities are not overburdened.

Goal 5.9.1-G4: Park, trail and open space facilities that are accessible and provide connections to destination points and activity centers within the City.

Policy 5.9.1-P1: Develop additional parkland in the City so that it is integrated into neighborhoods and meets the standards for size, amenities, and location to serve residents and employees.

Policy 5.9.1-P2: Develop new parks to serve the needs of the surrounding community based on the criteria defined on Table 5.9-1.

Policy 5.9.1-P5: Encourage public visibility for all parks, trails, and open spaces.

Policy 5.9.1-P20: Promote the continuation of a parkers per population ratio of 2.4 per 1,000 residents and explore the potential to increase the ratio to 3.0, based on the Parks and Recreation Needs Assessment (Parks Master Plan), referenced in Plan Prerequisite 5.1.1.-P24.

Schools and Community Facilities Goals

Goal 5.9.2-G1: Schools and community facilities that meet the needs of all segments of the population.

Goal 5.9.2-G2: Appropriate arts, cultural, recreational, schools and other community facilities in concert with new development.

Policy 5.9.2-P1: Provide a diverse range of community, art, cultural, and recreational facilities to meet the varying needs of residents in the City, including youth and seniors.

Public Services Goals and Policies

Goal 5.9.3-G1: A safe and secure environment for people and property in the community.

Goal 5.9.3-G2: Public Safety response-time goals met throughout the City.

Policy 5.9.3-P2: Provide police and fire services that respond to community goals for a safe and secure environment for people and property.

Policy 5.9.3-P3: Maintain a City-wide average three-minute response time for 90 percent of police emergency service calls.

Policy 5.9.3-P4: Maintain a City-wide average three-minute response time for fire emergency service calls.

Policy 5.9.4-P5: Maintain emergency traffic preemption controls for traffic signals.

Policy 5.9.4-P6: Maintain the fire and hazards materials mutual aid agreements with surrounding jurisdictions.

Conservation Goals and Policies

Goal 5.10.1-G3: Adequate solid waste disposal capacity through effective programs for recycling and composting.

Goal 5.10.1-G4: Adequate wastewater treatment and conveyance capacities.

Policy 5.10.1-P6: Require adequate wastewater treatment and sewer conveyance capacity for all new development.

Policy 5.10.1-P7: Encourage the use of local recycling facilities to divert waste from landfills.

Policy 5.10-P8: Increase to 80 percent reduction for solid waste tonnage by 2020, or as consistent with the CAP.

Water Goals and Policies

Goal 5.10.4-G1: A reliable, safe supply of potable water adequate to meet present and future needs.

Goal 5.10.4-G3: A reduction in the demand and consumption of water resources.

Saratoga

City of Saratoga 2040 General Plan (2024)

Open Space/ Conservation Element

Parks and Outdoor Recreation

Goal OSC-3: To provide and maintain parks and a variety of passive and active recreational sites that are located, designed, and improved to serve the needs of the residents, the community, and the neighborhoods of Saratoga.

Policy OSC-3.1: Ensure that existing and future parks and dedicated open spaces remain part of the public domain in perpetuity.

Policy OSC-3.2: Preserve open space and recreational resources provided on school sites and surplus school sites through joint use agreements, acquisition, and/or land use controls.

Goal OSC-4: Maintain a ratio of 5 acres or more of high-quality park and open space area per 1,000 residents.

Policy OSC-4.1: Promote dedication of land for parks and recreational open space.

Water Supply

Goal OSC 10: Maximize efficiencies in the use of the City's water supply.

Safety Element

Goal SAF-5: A community that promotes a culture of preparedness and is ready to respond to future natural and human caused hazard events.

Policy SAF-5.1: Ensure the City's emergency preparedness efforts and resources are prioritized to better protect residents and businesses.

Policy SAF-5.2: Coordinate emergency management planning with local jurisdictions and regional agencies to anticipate cumulative impacts during times of disaster.

Policy SAF-5.4: Maintain a high level of emergency response capability.

Policy SAF-5.5: Support enhancements to fire service through the maintenance of fire equipment and the training of fire personnel.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Community Character Element

Recreation

Goal CC-10: High-Quality Recreation Programming. The City strives to develop and implement passive and active recreation and enrichment programs that:

- Provide constructive opportunities for fitness, well-being, healthy coping and stress management.
- Highlight cultural practices and traditions reflective of a diverse community.
- Promote activities that foster interaction among diverse parts of the community.
- Encourage creative expression, education, skill development and personal enrichment.
- Contribute to the creation of a healthy community; and promote community participation in recreation for all ages.

Goal CC-11: Wide Range of Recreation Programming. The City strives to ensure equal opportunities for participation and to provide for a range of structured and unstructured areas, and a variety of general and special interest uses in parks and facilities. The City also provides a wide range of program choices, open space, amenities and facility offerings to meet the recreational needs of a diverse and changing population, including identified subgroups and special populations. Policies related to acquiring and/developing open space facilities and amenities are also included here. Competing interests and finite resources, however, require the City to set some priorities.

Goal CC-12: Maximum Access to Recreation Services, Facilities and Amenities. The City strives to maximize access to all of its services, facilities and amenities.

Safety and Noise Element

Police, Fire, and Emergency Services

Goal SN-3: Ensure a safe and secure environment for people and property in the community by providing effective safety and prevention and education services.

Policy SN-3.1: Provide Rapid and Timely Response to all emergencies.

Transportation

Santa Clara County

Santa Clara County General Plan (1994)

Countywide Issues and Policies

Transportation

Policy C-TR 1: Santa Clara County should develop and maintain an adequate, balanced, and integrated transportation system that is affordable and convenient to use and that is capable of meeting projected future demand.

Policy C-TR 2: An adequate transportation system for Santa Clara County should be considered essential for improving overall quality of life, including:

a. continued economic development and increased living standards;

b. enhanced environmental quality; and

c. improved livability of urbanized areas

Strategy #2: Manage Travel Demand, System Efficiency, and Congestion

Metropolitan Transportation Commission – Plan Bay Area 2050

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county Bay Area. The current regional transportation plan, known as Plan Bay Area 2050, was adopted by MTC on October 21, 2021. Plan Bay Area 2050 presents a strategic framework for investments and improvements across the Bay Area's nine counties, aiming to strengthen housing, the economy, transportation, and the environment. With a long-term vision extending through 2050 and beyond, the plan prioritizes maintaining, managing, and advancing the surface transportation system as a key component of its broader $1.4 trillion commitment to fostering a more equitable and resilient future for the region.

Santa Clara Valley Transportation Authority

The Santa Clara Valley Transportation Authority (VTA) is an independent special district that provides bus, light rail, and paratransit services, and participates as a funding partner in regional passenger rail service. As Santa Clara County's (County's) congestion management agency, VTA has a statutory role to work with local jurisdictions on issues related to land use and transportation. In this role, VTA works with its member agencies (the County and the 15 cities and towns in Santa Clara County) on the transition from LOS to VMT. This work includes development of the VMT Evaluation Tool (VTA 2021), which can be used by member agencies

to screen and estimate project-generated VMT for certain types of land use projects in Santa Clara County.

Congestion Management Program

VTA is responsible for developing Santa Clara County's comprehensive transportation improvement program in coordination with local jurisdictions that will improve the performance of the multimodal transportation system. VTA is authorized to set priorities for federal and state funding of transportation improvements that affect the Santa Clara Congestion Management Program's (CMP's) transportation system. The CMP's roadway network includes all freeways and expressways in Santa Clara County, in addition to 252 major intersections throughout the county. There are no identified CMP facilities in the Program Renewal Area. VTA is responsible for monitoring operations on most Caltrans freeway facilities and expressways in Santa Clara County.

VTA requires local jurisdictions to analyze the impacts of new developments, or land use policy changes, on CMP facilities if they are expected to generate 100 or more new peak-hour trips. VTA last updated its guidelines in 2014 and, because those guidelines are based on LOS, they are relevant only to CMP compliance and not to CEQA compliance.

Valley Transportation Plan 2040

As the congestion management agency for Santa Clara County, VTA is responsible for developing a long-range countywide transportation plan, called Valley Transportation Plan (VTP) 2040 (VTA 2015). The projects included in the VTP serve as VTA's recommendations for inclusion in *Plan Bay Area* Metropolitan Transportation Commission and Association of Bay Area Governments 2021) and are updated on a four-year cycle coinciding with updates to that plan. VTP 2040 provides programs, projects, and policies for roadways, transit, intelligent transportation systems and systems operations management, bicycle facilities, pedestrian facilities, and the integration of land use and transportation. The VTA Board of Directors adopted VTP 2040 in September 2014.

Countywide Bicycle Plan

The Santa Clara Countywide Bicycle Plan (VTA 2018) synthesizes other local and county plans into a comprehensive 20-year cross-county bicycle corridor network and expenditure plan. VTA adopted the Santa Clara Countywide Bicycle Plan in 2018; the plan identifies approximately 350 miles of priority cross-county bicycle corridor and 10 corridors for potential bicycle superhighways. Long-range bicycle network planning and the means by which projects compete for funding and prioritization are also documented in VTP 2040 (described above).

Campbell

Envision Campbell General Plan Update 2040 (2023)

Goal T-1: Create a Complete Streets network that accommodates all users

Policy T-1.1: Develop and implement a connected multi-modal transportation network that balances transportation modes, encourages non-automobile travel, and reduces greenhouse gas emissions, while

promoting healthier travel alternatives for all users and respecting context.

Action T-1.i: Prepare a multimodal improvement plan to support buildout of the General Plan, update the City's Capital Improvement Plan (CIP) to include, as appropriate, the identified improvements, and create and adopt a multimodal transportation impact fee (TIF) program to provide funding for the remaining improvements.

Goal T-2: Support a regional multimodal transportation system that meets regional transportation needs

Action T-2.c: Cooperate with the VTA, surrounding communities, and other agencies to establish and maintain regional bicycle and pedestrian facilities including off-road paths and trails utilizing creek, utility, and railroad rights-of-way that are safe and convenient for commuting and recreational use.

Goal T-3: Manage Traffic Demand and Reduce Vehicle Miles Traveled (VMT)

Policy T-3.1: Continue to use established vehicle miles traveled (VMT) metric(s), evaluation method(s), and significance threshold(s) that comply with state law such as SB 743.

Action T-3.a: Maintain and implement vehicle miles traveled (VMT) metrics, evaluation methods, and significance thresholds consistent with the requirements of state law, such as SB 743. Apply these VMT standards during the CEQA review of future development projects in Campbell.

Action T-3.c: Work with neighboring communities to coordinate traffic signals on arterials to maintain the movement of people, goods, and services and discourage cut-through traffic in residential neighborhoods.

Action T-3.d: Identify and properly sign truck routes on arterials to regulate truck movements.

Goal T-4: Implement Best Transportation Practices in New Developments

Policy T-4.1: Require new developments and redevelopments to incorporate design features that support walking, bicycling, ridesharing, ride-hailing, and transit use.

Policy T-4.2: Require new developments and redevelopments to use best practices in providing pedestrian and bicycle connections between the sites and existing and planned facilities, including those identified in the Bicycle Master Plan, Pedestrian Master Plan, and other relevant plans and documents.

Cupertino

Cupertino General Plan Community Vision 2015-2040 (2014)

Goal M-1: Actively participate in regional planning processes to coordinate local planning and to advocate for decisions that meet and complement the needs of Cupertino.

Policy M-1.1: **Regional Transportation Planning –** Participate in regional transportation planning processes to develop programs consistent with the goals and policies of Cupertino's General Plan and to minimize adverse impacts on the City's circulation system. Work with neighboring cities to address regional transportation and land use issues of mutual interest.

Policy M-1.3: **Regional Trail Development –** Continue to plan and provide for a comprehensive system of trails and pathways consistent with regional systems, including the Bay Trail, Stevens Creek Corridor, and Ridge Trail.

Goal M-3: Support a safe pedestrian and bicycle street network for people of all ages and abilities

Policy M-3.1: **Bicycle and Pedestrian Master Plan –** Adopt and maintain a Bicycle and Pedestrian master plan, which outlines policies and improvements to streets, extensions of trails, and pathways to create a safe way for people of all ages to bike and walk on a daily basis.

Policy M-3.3: **Pedestrian and Bicycle Crossings** – Enhance pedestrian and bicycle crossings and pathways at key locations across physical barriers such as creeks, highways, and road barriers.

Gilroy

City of Gilroy 2040 General Plan (2020)

Goal M-1: Provide for a safe and efficient transportation system that serves all users.

Policy M 1.5: **Transportation Network Connectivity** – Develop a transportation network that connects users of all modes to destinations in Gilroy.

Goal M-2: Provide complete streets that balance the diverse needs of users of the public right-of-way.

Policy M 2.1: **Serving All Users** – Provide safe, consistent, and convenient travel along and across streets to serve all users, including pedestrians, the disabled, bicyclists, motorists, movers of commercial goods, and users and operators of public transportation.

Policy M 2.7: **Safe Street Crossings** – Design street crossings to provide for the safety needs of bicyclists and pedestrians. Bridge crossings over creeks and at other locations shall be designed to accommodate bicycle lanes or paths in accordance with the designations set forth in the Bicycle and Pedestrian Transportation Plan. Bridges for the exclusive use of pedestrians and bicycles should be considered whenever barriers exist that impede convenient and safe access.

Goal M-3: Support bicycling and walking by providing a safe and extensive bicycle and pedestrian network.

Policy M 3.4: **Bicycle and Pedestrian Path Network –** Develop and maintain a network of paths along linear parks, public easements, drainages, and other open space areas to accommodate bicycle and pedestrian traffic.

Policy M 3.12: **Inter-Regional Bicycle Connectivity** – Support Santa Clara County Parks Department, Santa Clara County Roads and Airports Department, and the State Highway Department (Caltrans) in their efforts to develop south county bike lanes, routes, and trails, particularly as they provide inter-regional connectivity between Gilroy and its neighbors. Promote connectivity between city, county, and state bicycle improvements by coordinating the City's Bicycle and Pedestrian Master plans with the South County Circulation Element, County Tails Master Plan, and other relevant pedestrian and bicycle plans. Facilitate completion of segments of regional trails within Gilroy, such as the Bay Area Ridge Trail, along with possible trailheads.

Goal M 4: Plan for efficient and convenient local and regional transit systems that respond to the changing needs of Gilroy.

Policy M 4.8: **Consider Transit in Planning and Development Proposals –** Coordinate with VTA on advance planning projects and development proposals that may have implications for public transit and consider the VTA's Transit Sustainability Policy/Service Design Guidelines.

Goal M 5: Provide a safe and efficient network of streets for cars and trucks, as well as provide vehicle parking to meet the city's needs.

Policy M 5.2: **Safe Travel –** Provide roadways to allow for the safe travel of all vehicles, pedestrians, and bicyclists.

Policy M 5.6: **Road Maintenance –** Maintain roadways to allow for the safe travel of all vehicles, pedestrians, and bicyclists. Emphasize preventative maintenance to reduce costs associated with roadway replacement.

Policy M 5.11: **Parking –** Maintain and implement a comprehensive on- and off-street parking system that serves the needs of residents and businesses while supporting the use of alternative transportation.

Policy M 5.24: **Trails Master Plan** – Update the City's Trails Master Plan every five years to ensure it reflects the needs and current conditions, prioritizes capital improvement projects that creates and maintains a safe and logical bikeways system, provides adequate bicycle parking, supports the City's Complete Streets Policy, and is coordinated with the countywide system.

Goal M 7: Maintain and increase cooperation between Gilroy and neighboring jurisdictions, regional organizations, and relevant State agencies.

Policy M 7.2: **County Coordination** – Work with Santa Clara County on the development of transportation facilities within the General Plan planning area but within the jurisdiction of the County, including trails and bicycle paths in the County Trails Master Plan.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Goal 1: Support development of an efficient regional transportation system

Policy 1.1: Promote improvement and maintenance of all regional highways, expressways, and freeways in the area, consistent with other circulation policies.

Policy 1.3: Cooperate with regional agencies to promote area-wide transportation solutions, and actively participate in area-wide planning studies and commissions.

Goal 2: Provide for convenient and safe vehicular travel throughout Los Altos.

Policy 2.7: Cooperate with adjacent jurisdictions to provide appropriate roadway transitions and street design.

Policy 2.8: Cooperate with adjacent communities to maintain adequate service levels at shared intersections.

Policy 2.12: Provide adequate maintenance of local streets and roadways.

Policy 2.17: Maintain adequate emergency access for all land uses.

Policy 2.21: Continue to work with the police department to promote compliance with traffic laws to improve the safety of the local roadway system.

Goal 3: Promote local and regional transit as a viable alternative to automobile travel for all residents and especially for transit-dependent individuals.

Policy 3.1: Promote expansion of regional public transportation service and usage to provide alternative means of transportation and help reduce air pollution generated by automobiles.

Goal 4: Provide for the convenient and safe movement of bicyclists and pedestrians throughout the City to meet the commuter and recreation needs of the community.

Policy 4.1: Develop and maintain a comprehensive and integrated system of bikeways that promote bicycle riding for commuting and recreation.

Policy 4.6: Pursue potential rights-of-way such as Santa Clara Valley Water District and other utility easements for bicycle and pedestrian trail development.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update 2007

Goal 1: The Town's goal is to maintain its quiet residential roads:

- In good condition;
- In a visually pleasing state;
- In a safe condition;
- As a part of transportation network that meets the needs of all users;
- In a condition that discourages through-traffic; and
- As a road system that accepts private roads into the public road system only when they have met Town standards.

Policy 1.1: The circulation system should be compatible with the semi-rural nature of the community, a system that makes the community relatively impermeable to vehicular through traffic and open and safe to those on foot, bicycle, and horseback.

Policy 1.2: The Town should develop and maintain corridors for travel for motorists, bicyclists, pedestrians, and equestrians through Town in which the user can enjoy and view the natural environment and open spaces that provide a buffer from adjacent land uses. These corridors should include pathways proposed or existing in the Pathways Element.

Goal 2: Los Altos Hills enjoys its quiet semi-rural roadways and wishes to preserve its current character.

Policy 2.1: Provide adequate space in public right-of-ways to accommodate semi-rural roadways, pathways, utilities, drainage, and vegetative buffers.

Policy 2.7: The Town shall pursue cost-effective maintenance of the roadway network. Roadways shall be maintained in a priority order based on traffic levels and cost effectiveness while preventing long-term deterioration.

Policy 2.8: Roadway maintenance should not interfere with pathways or drainage.

Goal 5: Driveways should be compatible with the natural terrain, should have minimal impact on grades and vegetation, and should be designed to provide safe access to and from the individual parcels.

Policy 5.4: Driveways shall provide safe and adequate ingress and egress to private parcels. Driveways shall have adequate sight distance to allow for safe entry onto the roadway.

Policy 5.5: Driveway design shall be required to minimize cut and fill and impacts on vegetation, consistent with providing for safe access.

Goal 6: Provide for well-maintained, safe bikeways that recognize and encourage safety for bicyclists throughout the Town.

Policy 6.1: Support the provision of safe bicycle routes that will encourage safety for bicyclists in balance with encouraging safety and reducing conflicts for all other users of the road.

Policy 6.2: The Town shall encourage bikeway connections to regional bikeways in adjacent jurisdictions.

Goal 7: Provide for safe pedestrian routes in appropriate locations.

Policy 7.2: Ensure that the design of pedestrian improvements is consistent with the semi-rural character of the Town.

Goal 8: To provide safe roadways for all travelers.

Policy 8.1: The roadway network shall emphasize only minimal through traffic using local streets.

Goal 9: The roadways of Los Altos Hills are scenic and semi-rural. The design and maintenance of the roadways should preserve these qualities.

Policy 9.6: The Town shall request open space easements where necessary to ensure the preservation of steep slopes, heritage oak trees, creek areas.

Goal 10: Provide for the most efficient use of roadways for emergency vehicles and for emergency access for residents.

Policy 10.1: Roadways and driveways shall conform to minimum standards for emergency vehicles, generally as recommended by the Fire Department and approved by the Town.

Policy 10.5: Emergency access roads shall, to the greatest extent feasible, be made readily accessible to emergency vehicles during major disasters.

Goal 11: Accommodate drainage and utilities in a manner that maintains the semi-rural character of its roadways.

Policy 11.3: The drainage system shall not burden the natural waterways with road pollutants and silt.

Policy 11.4: Drainage shall not create safety hazards for pedestrians, equestrians, or bicyclists, or damage to adjacent properties.

Policy 11.8: Utilities, including utility poles, fire hydrants, and utility meters, shall not impede the use of pathways.

Goal 13: The Town wishes to minimize traffic impacts from present and future activities beyond the control of Los Altos Hills.

Policy 13.3: Los Altos Hills will work with neighboring cities and other agencies to review the environmental impacts of proposed projects, especially in terms of circulation, on the Town. The Town will actively negotiate to reduce those impacts to a level of insignificance.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Goal MOB-2: Provide continuous, safe, and efficient bikeway and pedestrian facilities.

Policy MOB-2.5: Avoid Negative Impacts on Bicycle Use – All new development shall be designed to enhance the safety or convenience of bicycle use throughout the Town.

Policy MOB-2.11: Safe Pedestrian Access along Unimproved Roadways – Require adequate width of roadway clearance between edge of travel and/or edge of pavement, wider sidewalks, and mid-block crossings for pedestrian mobility and safety.

Goal MOB-5: Support a non-driving Los Gatos by reducing reliance on the automobile and promoting alternative modes of transportation.

Policy MOB-5.1: Prioritize Non-Driving Transportation Modes – Prioritize the use of non-driving transportation modes such as walking, bicycling, transit, a shuttle system, and other forms of personal mobility that are energy conserving and non-polluting.

Goal MOB-7: Optimize the Town's transportation system to provide safe and efficient movement to meet the needs of all users.

Policy MOB-7.1: Consistency between Land Use and Transportation Planning – The Town shall ensure that land use and transportation planning are cohesive, consistent, mutually supportive, and strive to reduce VMT. This includes:

- Promoting land use patterns that encourage people to walk, bicycle, or use public transit routinely for a significant number of their daily trips;
- Promoting TDM options;
- Using the Town's provision of public services to direct development to the most appropriate locations; and
- Promoting land uses that are supportive of non-driving modes, including infill of vacant land and redevelopment sites, and mixed uses

Policy MOB-7.4: Regional Transportation Needs – Participate in regional efforts to meet regional transportation needs to provide Los Gatos community members greater connectivity to surrounding communities in Santa Clara County and the Bay Area as a whole.

Goal MOB-13: Provide adequate parking availability and minimize impacts on surrounding residential neighborhoods.

Policy MOB-13.1: Parking for New Development – Require new development to provide an adequate number of parking spaces and encourage shared parking whenever possible. Parking shall be adequate to avoid adversely affecting adjacent residential properties.

Goal MOB-15: Provide for the safe and efficient movement of goods to support commerce, industry, and the community.

Policy MOB-15.1: Minimize Truck Conflicts – Minimize potential conflicts between trucks, truck loading and unloading areas, and pedestrian, bicycle, and transit travel on streets designed as truck routes.

Policy MOB-15.2: Minimize Environmental Impacts – Maximize the efficiency of goods movement while working to minimize related environmental impacts.

Milpitas

Milpitas 2040 General Plan (2021)

Goal CIR-1: Provide a transportation system that efficiently, equitably, and effectively supports the City's land use vision, minimizes vehicle miles traveled (VMT), enhances connectivity of the existing network, and supports the use of all modes of transportation.

Policy CIR 1-2: Ensure that the City's transportation system supports planned land uses and removes barriers to all types of transportation options as envisioned in the Land Use Element.

Policy CIR 1-7: Coordinate with neighboring jurisdictions regarding planned developments and transportation improvements that impact communities in both jurisdictions.

Policy CIR 1-13: Maintain up-to-date emergency preparedness and evacuation plans and procedures in coordination with appropriate state, regional, county, and local agencies and departments.

Monte Sereno

Monte Sereno General Plan (2008)

Goal C-1: Promote safe and efficient vehicular movement within the city.

Policy C-1.3: Maintain roadways and traffic-control devices in a safe and effective operating condition.

Goal C-2: Minimize traffic congestion to the extent possible.

Goal C-3: Minimize intrusion of through traffic on residential streets.

Goal C-5: Provide for safe pedestrian and bicycle routes in appropriate locations.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Goal TR-1: A balanced, safe, and efficient circulation system for all segments of the community, meeting local needs and accommodating projected regional and sub-regional traffic while protecting neighborhoods.

Policy TR-1.1: System Efficiency – Plan, construct, and maintain a coordinated and efficient system of local streets and highways throughout the community, meeting local needs and accommodating projected regional and sub-regional traffic, while protected neighborhoods from cut-through traffic.

Goal TR-8: A usable and comprehensive bikeway system that safely connects neighborhoods with workplaces and community destinations.

Policy TR-8.4: Coordinated Bicycle Planning – Coordinate development of the bikeways system with the Santa Clara Countywide Trails Master Plan, the Santa Clara Countywide Bicycle Plan, the South County Joint Area Plan, the Santa Clara County Bicycle Technical Guidelines, and the California Department of Transportation Highway Design Manual.

Policy TR-8.6: Multi-Use Trail Accessibility – All multi-use bicycle/pedestrian trails shall comply with State and federal accessibility codes and standards, such as those established by the Americans with Disability Act (ADA) and California Access Code (Title 24, California Code of Regulation).

Policy TR-8.11: Multi-Jurisdictional Bikeway Alignments – For multi-jurisdictional alignments, develop partnerships with Santa Clara County to plan, finance, implement, and maintain the bikeways system.

Policy TR-8.14: Bikeways Master Plan – Implement and maintain the City's bikeways system based on standards established in the Bikeways Master Plan.

Goal TR-9: Expanded pedestrian opportunities

Policy TR-9.4: Coordination with Pedestrian Planning – Development of the trails and pedestrian system shall be coordinated with the City's Bikeways Master Plan, City standard details, Santa Clara Countywide Trails Master Plan, the Santa Clara Countywide Bicycle Plan, the South County Joint Area Plan, the Santa Clara County Bicycle Technical Guidelines, and the California Department of Transportation Highway Design Manual.

Policy TR-9.5: Trail Guidelines – Trails shall comply with the Trail Guidelines included in the Trails and Natural Resources Master Plan.

Policy TR-9.6: Pedestrian Facility Accessibility – All trails and pedestrian access shall comply with State and Federal accessibility codes and standards, such as those established by the Americans with Disability Act (ADA) and California Access Code (Title 24, California Code of Regulations).

Policy TR-9.9: Multi- Jurisdictional Trail Alignments – For multi-jurisdictional alignments, develop partnerships with Santa Clara County to plan, finance, implement, and maintain the trail system.

Policy TR-9.11: Trail System Standards – Implement and maintain the City's trails system based on standards established in the Trails and Natural Resources Master Plan.

Goal TR-11: Coordinated transportation planning efforts with local, regional, State, and federal agencies.

Policy TR-11.2: Sub-Regional System – Work with the County and other agencies to plan and develop and effective sub-regional long-range transportation system to link Morgan Hill with areas to the north and south without promoting congestion in local neighborhoods, particularly along Butterfield Boulevard and Santa Teresa Boulevard. Congestion on Monterey Road in Downtown Morgan Hill will be tolerated in order to promote a pedestrian-friendly character and favor transit-oriented development.

Mountain View

Mountain View 2030 General Plan (2012)

Goal MOB-1: Streets that safely accommodate all transportation modes and persons of all abilities.

Policy MOB 1.1: Multi-modal planning: Adopt and maintain master plans and street design standards to optimize mobility for all transportation modes.

Policy MOB-1.2: Accommodating all modes - Plan, design, and construct new transportation improvement projects to safely accommodate the needs of pedestrians, bicyclists, transit riders, motorists, and persons of all abilities.

Goal MOB-3: A safe and comfortable pedestrian network for people of all ages and abilities at all times.

Policy MOB 3.3: Pedestrian and bicycle crossings – Enhance pedestrian and bicycle crossings at key locations across physical barriers.

Goal MOB-4: A comprehensive and well-used bicycle network that comfortably accommodates bicyclists of all ages and skill levels.

Policy MOB 4.1: Bicycle network – Improve facilities and eliminate gaps along the bicycle network to connect destinations across the city.

Goal MOB-7: Innovative strategies to provide efficient and adequate vehicle parking.

Policy MOB 7.3: Public parking management – Manage parking so that adequate parking is available for surrounding uses.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Goal T-1: Create a sustainable transportation system, complemented by a mix of land uses, that emphasizes walking, bicycling, use of public transportation, and other methods to reduce GHG emissions and the use of single-occupancy motor vehicles.

Policy T-1.18: Increase cooperation with surrounding communities and other agencies to establish and maintain off-roadway bicycle and pedestrian paths and trails that are integrated with creek, utility, railroad rights-of-way and green spaces in a manner that helps enhance and define the community and avoids environmental impacts.

Policy T-1.20: Regularly maintain off-roadway bicycle and pedestrian paths, including sweeping, weed abatement, and surface maintenance.

Goal T-3: Maintain an efficient roadway network for all users.

Policy T-3.2: Enhance connections to, from, and between parks, community centers, recreation facilities, libraries, and schools for all users.

Policy T-3.4: Regulate truck movements and large commercial buses in a manner that balances the efficient movement of trucks and buses while preserving the residential character of Palo Alto's street system.

Goal T-6: Provide a safe environment for motorists, pedestrians, and bicyclists on Palo Alto streets.

Policy T-6.1: Continue to make safety the first priority of citywide transportation planning. Prioritize pedestrian, bicycle, and automobile safety over motor vehicle level of service at intersections and motor vehicle parking.

Goal T-8: Influence the shape and implementation of regional transportation policies and technologies to reduce traffic congestion and GHG emissions.

Policy T-8.1: Engage in regional transportation planning to reduce congestion and reduce single-occupant vehicle trips, and advocate for specific transit improvements and investments, such as Caltrain service enhancements and grade separations, Dumbarton Express service, enhanced bus service on El Camino Real with queue jumping and curbside platforms, HOV/HOT lanes and additional VTA bus service.

San José

Envision San José 2040 General Plan (2011)

Goal TR-1: Balanced Transportation System – Complete and maintain a multimodal transportation system that gives priority to the mobility needs of bicyclists, pedestrians, and public transit users while also providing for the safe and efficient movement of automobiles, buses, and trucks.

Policy TR-1.2: Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects.

Policy TR-1.5: Design, construct, operate, and maintain public streets to enable safe, comfortable, and attractive access and travel for motorists and for pedestrians, bicyclists, and transit users of all ages, abilities, and preferences.

Policy TR-1.8: Actively coordinate with regional transportation, land use planning, and transit agencies to develop a transportation network with complementary land uses that encourage travel by bicycling, walking and transit, and ensure that regional greenhouse gas emission standards are met.

Goal TR-2: Walking and Bicycling – Improve walking and bicycling facilities to be more convenient, comfortable, and safe, so that they become primary transportation modes in San José.

Policy TR-2.2: Provide a continuous pedestrian and bicycle system to enhance connectivity throughout the City by completing missing segments. Eliminate or minimize physical obstacles and barriers that impede pedestrian and bicycle movement on City streets. Include consideration of grade-separated crossings at railroad tracks and freeways. Provide safe bicycle and pedestrian connections to all facilities regularly accessed by the public, including the Mineta San José International Airport.

Policy TR-2.12: Consider alternative public right of way materials for roadway, sidewalks, park strips, crosswalks, and trails etc. to enhance the pedestrian and bicyclist experience as well as provide other benefits such as stormwater management and hydromodification control.

Goal TR-6: Goods Movement – Provide for safe and efficient movement of goods to support commerce and industry.

Policy TR-6.1: Minimize potential conflicts between trucks and pedestrian, bicycle, transit, and vehicle access and circulation on streets with truck travel.

Goal TR-8: Parking Strategies – Develop and implement parking strategies that reduce automobile travel through parking supply and pricing management.

Policy TR-8.5: Promote participation in car share programs to minimize the need for parking spaces in new and existing development.

Policy TR-8.7: Encourage private property owners to share their underutilized parking supplies with the general public and/or other adjacent private developments.

Santa Clara

City of Santa Clara 2010-2035 General Plan (2010)

Goal 5.8.1-G1: Transportation networks that support the General Plan Major Strategies as well as the Goals and Policies for Prerequisites, Land Use, Focus Areas, Neighborhood Compatibility, Public Services, and Environmental Quality.

Goal 5.8.1-G2: Transportation networks that provide a safe, efficient, convenient, and integrated system to move people and goods.

Policy 5.8.1-P2: Link all City transportation networks, including pedestrian and bicycle circulation, to existing and planned regional networks.

Goal 5.8.2-G1: A street system that supports the safe and efficient movement of people, goods, and services.

Policy 5.8.2-P8: Minimize disruption of traffic flow resulting from truck traffic and deliveries, particularly during commute hours.

Policy 5.8.2-P11: Implement Street standards that remove barriers and increase accessibility.

Policy 5.8.2-P12: Coordinate transportation planning with emergency service providers to ensure continued emergency service operations and services.

Goal 5.8.6-G2: A parking supply that encourages the use of alternate transportation modes.

Goal 5.8.6-G3: Flexible parking standards that address unique development types and locations within the City.

Policy 5.8.6-P2: Identify parking supply standards that promote economic development, neighborhood compatibility, environmental quality, and public safety, while reducing dependence on the automobile.

Policy 5.8.6-P3: Encourage flexible parking standards that meet business and resident needs as well as avoid an oversupply in order to promote transit ridership, bicycling, and walking.

Saratoga

City of Saratoga 2040 General Plan (2024)

Goal CI-1: Provide a balanced, safe, and convenient multi-modal transportation system that accommodates all transportation modes and users of all abilities while maintaining the City's small-town character.

Policy CI-1.3: Improve the accessibility, capacity, safety, and convenience of existing and planned transit, bicycle, and pedestrian systems to promote the use of non-automobile modes of transportation as part of daily activities.

Goal CI-6b: Encourage a comprehensive system of trails and pathways pursuant to the Open Space and Conservation Element along roadways in areas where safety and aesthetics permit.

Policy CI-6.2: Integrate the City's bikeway and walkway system with those of adjacent communities, where economically feasible.

Goal CI-9a: Provide adequate parking for all development to minimize intrusion into adjacent neighborhoods.

Policy CI-9.6: Allow reduced parking supplies for parcels, where appropriate, in order to utilize the area-wide parking supply.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Goal LT-1: Coordinated Regional and Local Planning – Protect the quality of life, the natural environment, and property investment, preserve home rule, secure fair share of funding, and provide leadership in the region.

Policy LT-1.1: Participate in coordinated land use and transportation planning in the region.

Policy LT-1.4: Coordinate with adjacent cities on local land use and transportation planning.

Policy LT-1.6: Integrate land use planning in Sunnyvale and the regional transportation system.

Goal LT-2: Environmentally sustainable land use and transportation planning and development – Support the sustainable vision by incorporating sustainable features into land use and transportation decisions and practices.

Policy LT-2.1: Enhance the public's health and welfare by promoting the City's environmental and economic health through sustainable practices for the design, construction, maintenance, operation, and deconstruction of buildings, including measures in the climate action plan.

Goal LT-3: An effective multimodal transportation system – Offer the community a variety of transportation modes for local travel that are also integrated with the regional transportation system and land use pattern. Favor accommodation of alternative modes to the automobile as a means to enhance efficient transit use, bicycling, and walking, and corresponding benefits to the environment, person-throughput, and qualitative improvements to the transportation system environment.

Policy LT-3.5: Follow California Environmental Quality Act requirements, congestion management program requirements, and additional city requirements when analyzing the transportation impacts of proposed projects and assessing the need for offsetting transportation system improvements or limiting transportation demand.

Water Quality

Santa Clara County

Santa Clara County General Plan (1994)

Resource Conservation Chapter

Water Quality and Watershed Management

Policy C-RC 18: Water quality countywide should be maintained and improved where necessary to ensure the safety of water supply resources for the population and the preservation of important water environments and habitat areas.

Policy C-RC 19: The strategies for maintaining and improving water quality on a countywide basis, in addition to ongoing point source regulation, should include:

a. Effective non-point source pollution control;
b. restoration of wetlands, riparian areas, and other habitats which serve to improve Bay water quality; and
c. comprehensive Watershed Management Plans and "best management practices" (BMPs).

Policy C-RC 20: Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:

a. erosion and sedimentation;
b. organic matter and wastes;
c. pesticides and herbicides;
g. industrial wastewater discharges;
h. hazardous wastes; and
i. Non-point source pollution.

Policy C-RC 21: Multi-jurisdictional, countywide programs and regulatory efforts to address water pollution problems should have the full support and participation of each jurisdiction within Santa Clara County, including cities, special districts, state and federal agencies, and County government.

Strategy #1: Reduce Non-Point Source Pollution

Policy C-RC 22: Countywide, compliance should be achieved with the requirements of the National Pollution Discharge Elimination System (NPDES) permit for discharges into S.F. Bay, and to that end, the Countywide Nonpoint Source Pollution Control Program should receive the full support and participation of each member jurisdiction.

Strategy #2: Restore Wetlands, Riparian Areas, and Other Habitats That Improve Bay Water Quality

Policy R-RC-13: Sedimentation and erosion shall be minimized through controls over development, including grading, quarrying, vegetation removal, road and bridge construction, and other uses which pose such a threat to water quality.

Policy C-RC 25: Wetlands restoration for the purpose of enhancing municipal wastewater treatment processes, improving habitat and passive recreational opportunities should be encouraged and developed where cost-effective and practical.

Policy R-HS 19: In areas of high potential for activation of landslides, there shall be no avoidable alteration of the land or hydrology which is likely to increase the hazard potential, including:

a. saturation due to drainage or septic systems;

b. removal of vegetative cover; and

c. steepening of slopes or undercutting the base of a slope.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Conservation and Open Space Chapter

Goal COS-7: Protect and maintain animal and plant species, city trees, waterways, and other supporting biological habitats within Campbell.

Policy COS-7.5: Work with Valley Water (Santa Clara Water Valley District) to preserve wetlands, riparian corridors, and buffer zones in Campbell by continuing to require that new development follow the "Guidelines and Standards for Land Use Near Streams" to protect streams and riparian habitats. Encourage the use of water quality wetlands, bioretention, watershedscale retrofits, etc., where such measures are likely to be effective and technically and economically feasible.

Policy COS-7.6: Limit the disturbance of natural water bodies and drainage systems in Campbell by conserving natural open space areas, protecting channels, and minimizing the impacts from stormwater runoff.

Community Services and Facilities Chapter

Goal CSF-5: Design and maintain attractice, efficient, and environmentally sound storm drain systems to accommodate runoff from existing and projected development and prevent property damage due to flooding.

Policy CSF-5.2: Require all development projects to demonstrate how stormwater runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process and as required by the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit.

Policy CSF-5.3: Require all future development projects to analyze their drainage and stormwater conveyance impacts and either demonstrate that the city's existing infrastructure can accommodate increased stormwater flows, or make the necessary improvements to mitigate all potential impacts.

Policy CSF-5.4: Applicable projects shall incorporate Best Management Practices (BMPs) and Low Impact Development measures (LID) to treat stormwater before discharge from the site. The facilities shall be sized to meet regulatory requirements.

Policy CSF-5.5: Where feasible, conform developments to natural landforms, avoid excessive grading and disturbance of vegetation and soils, retain native vegetation and trees, and maintain natural drainage patterns.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Environmental Resources and Sustainability

Goal ES-7: Ensure protection and efficient use of all water resources.

Policy ES-7.1: Natural Water Bodies and Drainage Systems. In public and private development, use Low Impact Development (LID) principles to manage stormwater by mimicking natural hydrology, minimizing grading and protecting or restoring natural drainage systems.

Policy ES-7.2: Reduction of Impervious Surfaces. Minimize stormwater runoff and erosion impacts resulting from development and use low impact development (LID) designs to treat stormwater or recharge groundwater

Policy ES-7.3: Pollution And Flow Impacts. Ensure that surface and groundwater quality impacts are reduced through development review and voluntary efforts.

Policy ES-7.8: Natural Water Courses. Retain and restore creek beds, riparian corridors, watercourses and associated vegetation in their natural state to protect wildlife habitat and recreation potential and assist in groundwater percolation. Encourage land acquisition or dedication of such areas.

Infrastructure Element

Goal INF-4: Implement best practices in stormwater management to reduce demand on the stormwater network, reduce soil erosion, and reduce pollution into reservoirs and the Bay.

Gilroy

City of Gilroy 2040 General Plan (2020)

Public Facilities and Services

Goal PFS 3: Maintain the City's water system to meet the needs of existing and future development while improving water system efficiency.

Policy PFS 3.5: Water Quality. Ensure the provision of healthy, safe water for all users in Gilroy through facilities, policies, programs, and regulations.

Goal PFS 5: Maintain an effective storm drainage system to accommodate runoff, prevent property damage due to flooding, and improve environmental quality.

Policy PFS 5.3: Green Infrastructure. Require on-site stormwater management system (i.e. "green infrastructure") design and Low Impact Development (LID) techniques per the City's adopted stormwater requirements to preserve and create open space, improve runoff water quality, and decrease runoff volume.

Natural and Cultural Resources

Goal NCR 1: Preserve and enhance Gilroy's natural resources for current and future residents.

Goal NCR 4: Maintain overall water quality by protecting surface and groundwater sources, restoring creeks and rivers to their natural state, and conserving water resources.

Policy NCR 4.7: Inter-Agency Coordination. Coordinate with agencies relevant to South County's water supply and water quality, including: the San Francisco Bay and Central Coast Regional Water Quality Control Boards; Valley Water; Santa Clara County; and Morgan Hill to protect regional water quality.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Open Space Element

Goal 2: Preserve and protect and provide for public enjoyment of natural areas (natural creek channels, topography, and vegetation), which are valuable natural resources.

Policy 2.3: Protect creeks, creekside areas and riparian habitat in their natural state while ensuring public safety and preserving a valuable natural resource.

Policy 2.5: Enforce local, state, and federal regulations addressing water quality and stormwater quality management.

Infrastructure & Waste Disposal Element

Goal 3: Abate non-point source water pollution.

Policy 3.1: Control surface runoff water discharges into the storm water system to comply with the National Pollutant Discharge Elimination System Permit and the receiving water limitations assigned by the California Regional Water Quality Control Board.

Policy 3.2: Establish non-point source pollution control measures and programs to attempt to reduce and control the discharge of pollutants into the City's storm drains and local creeks.

Policy 3.3: Minimize the amount of impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and where feasible maximize on-site infiltration of storm water runoff.

Policy 3.5: Preserve, and where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.

Natural Environment & Hazards Element

Goal 2: Reduce the potential for flooding along creeks that traverse Los Altos.

Policy 2.3: Continue to discourage concrete lining of creek beds, and encourage the Santa Clara Valley Water District to use environmentally sensitive solutions to control local erosion problems.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update 2007 (2007)

Conservation Element

Goal 1: Conserve creeks and riparian areas as open space amenities and natural habitat areas.

Policy 1.2: Work with the Santa Clara Valley Water District and other relevant regional agencies to enhance riparian corridors and provide adequate flood control by use of low impact restoration strategies.

Goal 5: Protect and conserve water resources.

Policy 5.1: Keep or restore major drainage courses in their natural condition insofar as possible because of their importance in supplying major vegetation, land forms and wildlife habitat, and storm drainage.

Policy 5.2: Protect the Town's groundwater from the adverse impacts of urban uses.

Policy 5.5: Reduce non-point source pollution in urban runoff.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Public Facilities, Services, and Infrastructure Element

Goal PFS-3: Minimize the amount of stormwater runoff, as well as protect and improve the water quality of runoff.

Environment and Sustainability Element

Goal ENV-6: Protect wetlands and riparian corridors, including intermittent and ephemeral streams.

Policy ENV-6.2: Retain Natural Conditions. Retain creek beds, riparian corridors, water courses, and associated vegetation in their natural state to assist groundwater percolation and prevent erosion, downstream sedimentation, and other degradation.

Goal ENV-16: Protect and conserve watersheds and water quality.

Policy ENV-16.1: Avoid Water Contamination from New Development. Require all applicants to demonstrate that new development will not contaminate surface water and/or groundwater.

Policy ENV-16.2: Conserve Land Contiguous to Reservoirs and Stream Channels. Apply land use regulations, scenic easements, or other appropriate measures to keep the maximum amount of land immediately

contiguous to reservoirs and stream channels undeveloped and undisturbed.

Policy ENV-16.3: Valley Water. Cooperate with Valley Water and other agencies to protect watersheds, groundwater, and riparian habitats from degradation.

Milpitas

Milpitas 2040 General Plan (2021)

Conservation and Sustainability

Goal CON-3: Protect and maintain waterways and other sensitive habitat for plant and animal species throughout Milpitas and to protect the health of the San Francisco Bay.

Policy CON 3-3: Limit the disturbance of natural water bodies and drainage systems in Milpitas by conserving natural open space areas, protecting channels, and minimizing the impacts and pollutants from stormwater and urban runoff.

Policy CON 3-5: Work with the Santa Clara Valley Water District to preserve wetlands, riparian corridors, and buffer zones in Milpitas by continuing to require that new development follow the "Guidelines and Standards for Land Use Near Streams" to protect streams and riparian habitats. Encourage the use of Green Stormwater Infrastructure such as water quality wetlands, bioretention swales, watershed-scale retrofits, and other low-impact development techniques, etc., consistent with the City's Green Stormwater Infrastructure Plan and where such measures are likely to be effective and technically and economically feasible.

Policy CON 3-6: Work cooperatively with local, state, and federal agencies to comply with regulations, reduce pollutants in runoff, and protect and enhance water resources in the Santa Clara Basin through implementation of the Santa Clara Valley Urban Runoff Prevention Program (SCVURPPP).

Monte Sereno

Monte Sereno General Plan (2008)

Goal OSC-6: Maintain a high level of water quality.

Policy OSC-6.1: Encourage the preservation of riparian habitat in a natural state by not allowing the culverting of existing creeks and requiring appropriate setbacks from creekbeds.

Policy OSC-6.2: Require development projects to reduce, to the extent feasible, sediment discharge and erosion during construction and

postconstruction. Require projects to incorporate mitigation measures, such as Best Management Practices (BMPs) to address these water quality issues.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Natural Resources and Environment

Goal NRE-8: Protection of water quality from contamination associated with urbanization.

Policy NRE-8.7: Aquifer Protection. In order to provide greater protection of the aquifers which supply drinking water to the South County, give special consideration to the management of contaminants (e.g., hazardous materials, sanitary effluents) in groundwater recharge areas where no protective aquitard layer exists. (South County Joint Area Plan 8.13)

Policy NRE-8.8: Water Quality Compliance. Implement Best Management Practices to improve water quality, in conformance with the South Santa Clara County and City of Morgan Hill Total Maximum Daily Load (TMDL) Monitoring Plan for the Pajaro River Watershed (2015) and findings in subsequent annual status updates, as required for compliance with community standards and applicable State and federal provisions.

Goal NRE-9: Cooperative efforts to ensure regional water quality.

Policy NRE-9.1: Interjurisdictional Coordination. Maintain close coordination with the following agencies and organizations which share jurisdiction and interest relative to South County's water supply and water quality: the Regional Water Quality Control Boards, Santa Clara Valley Water District, Santa Clara County, City of Gilroy Planning Department, and San Martin Planning Committee. (South County Joint Area Plan 10.02)

Safety, Services, and Infrastructure

Policy SSI-5.9: Riparian Natural Functions. Restore and maintain the natural functions of riparian corridors, creeks, and channels to reduce flooding, convey stormwater flows, and improve water quality.

Goal SSI-16: Minimized adverse effects on property, natural resources, and ground and surface water quality from stormwater runoff.

Mountain View

Mountain View 2030 General Plan (2012)

Infrastructure and Conservation

Goal INC-8: An effective and innovative stormwater drainage system that protects properties from flooding and minimizes adverse environmental impacts from stormwater runoff.

Policy INC 8.4: Runoff pollution prevention. Reduce the amount of stormwater runoff and stormwater pollution entering creeks, water channels and the San Francisco Bay through participation in the Santa Clara Valley Urban Runoff Pollution Prevention Program.

Policy INC 8.7: Stormwater quality. Improve the water quality of stormwater and reduce flow quantities.

Goal INC-17: A healthy and well-managed watershed that contributes to improved water quality and natural resource protection.

Policy INC 17.2: Natural hydrology in watersheds. Promote an ecologically sensitive approach to flood protection, encouraging natural hydrology and preserving habitat and ecology within watercourses.

Goal INC-18: Prevention and remediation of contamination in groundwater, surface water, soil and from soil vapor and vapor intrusion.

Policy INC 18.1: Contamination prevention. Protect human and environmental health from environmental contamination.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Natural Environment

Goal N-4: Water resources and infrastructure that are managed to sustain plant and animal life, support urban activities, and protect public health and safety.

Policy N-4.4: Manage water supply and water quality to reflect not only human use but also the water needed to sustain plant and animal life.

Policy N-4.9: Work with neighboring jurisdictions and regional agencies to protect groundwater.

Policy N-4.10: Reduce pollution in urban runoff from residential, commercial, industrial, municipal, and transportation land uses and activities.

San José

Envision San José 2040 General Plan (2011)

Measurable Environmental Sustainability

Goal MS-20 – Water Quality. Ensure that all water in San José is of the highest quality appropriate for its intended use.

Policy MS-20.3: Protect groundwater as a water supply source through flood protection measures and the use of stormwater infiltration practices that protect groundwater quality. In the event percolation facilities are modified for infrastructure projects, replacement percolation capacity will be provided.

Environmental Resources

Goal ER-8 – Stormwater. Minimize the adverse effects on ground and surface water quality and protect property and natural resources from stormwater runoff generated in the City of San José.

Policy ER-8.4: Assess the potential for surface water and groundwater contamination and require appropriate preventative measures when new development is proposed in areas where storm runoff will be directed into creeks upstream from groundwater recharge facilities.

Goal ER-9 – Water Resources. Protect water resources because they are vital to the ecological and economic health of the region and its residents.

Policy ER-9.1: In consultation with the Santa Clara Valley Water District, other public agencies and the SCVWDs Water Resources Protection Guidelines and Standards (2006 or as amended), restrict or carefully regulate public and private development in streamside areas so as to protect and preserve the health, function and stability of streams and stream corridors.

Policy ER-9.2: In consultation with the SCVWD restrict or carefully regulate public and private development in upland areas to prevent uncontrolled runoff that could impact the health and stability of streams.

Policy ER-9.4: Work with the SCVWD to preserve water quality by establishing appropriate public access and recreational uses on land adjacent to rivers, creeks, wetlands, and other significant water courses.

Policy ER-9.5: Protect groundwater recharge areas, particularly creeks and riparian corridors.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

Water Goals and Policies

Goal 5.10.4-G2: High water quality maintained throughout the City.

Policy 5.10.4-P5: Prohibit new development that would reduce water quality below acceptable State and local standards.

Safety Goals and Policies

Policy 5.10.5-P16: Require new development to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity and protect water quality.

Policy 5.10.5-P17: Require that grading and other construction activities comply with the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control Measures and with the California Stormwater Quality Association (CASQA), Stormwater Best Management Practice Handbook for Construction.

Policy 5.10.5-P18: Implement the Santa Clara Valley Nonpoint Source Pollution Control Program, Santa Clara Valley Urban Runoff Pollution Prevention Program and the Urban Runoff Management Plan.

Policy 5.10.5-P19: Limit development activities within riparian corridors to those necessary for improvement or maintenance of stream flow.

Saratoga

City of Saratoga 2040 General Plan (2024)

Open Space and Conservation

Goal OSC-8: Protect existing watercourses in the community and maintain water quality in surface and subsurface water sources.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Environmental Management

Goal EM-4: Adequate Water Quality. Ensure that all water meets state and federal standards for aesthetics, quality and health.

Goal EM-8: Protection of Creeks and Bay. Assure the reasonable protection of beneficial uses of creeks and San Francisco Bay, established in the Regional Board's Basin Plan, and protect environmentally sensitive areas.

Policy EM-8.2: Continue to support the identification and development of approaches to stormwater treatment and best management practices to control sources of pollutants through participation in local, regional, statewide and national associations and agencies (e.g. Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVRRP), Bay Area Stormwater Management Agencies Association, Storm water Quality Association, and American Public Works Association and similar organizations).

Policy EM-8.3: Ensure that stormwater control measures and best management practices (BMPs) are implemented to reduce the discharge of pollutants in storm water to the maximum extent practicable.

Policy EM-8.5: Prevent accelerated soil erosion. Continue implementation of a construction site inspection and control program to prevent discharges of sediment from erosion and discharges of other pollutants from new and redevelopment projects.

Policy EM-8.6: Minimize the impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies.

Goal EM-10: Reduced Runoff and Pollutant Discharge. Minimize the quantity of runoff and discharge of pollutants to the maximum extent practicable by integrating surface runoff controls into new development and redevelopment land use decisions.

Policy EM-10.1: Consider the impacts of surface runoff as part of land use and development decisions and implement BMPs to minimize the total volume and rate of runoff of waste quality and quantity (hydro modification) of surface runoff as part of land use and development decisions.

Wildfire

Santa Clara County

Santa Clara County General Plan (1994)

Safety and Noise Countywide Issues and Policies

Strategy #1: Plan for Immediate Disaster Response

Policy C-HS 17: Local governments should comply with all federal and state regulations regarding emergency planning and preparedness.

Strategy #2: Plan for Post-Disaster Recovery

Policy C-HS 21: Local emergency planning agencies should work to ensure continuity of government and a swift restoration of public and commercial services.

Santa Clara County Community Wildfire Protection Plan (2023)

The Santa Clara County Community Wildfire Protection Plan (CWPP) outlines strategies to reduce wildfire risks and enhance community resilience. It begins with a risk assessment that identifies high-risk areas based on factors such as vegetation, topography, and existing infrastructure. The plan includes mitigation strategies, recommending fuel reduction, vegetation management, and improving firebreaks to minimize wildfire spread. Additionally, it emphasizes emergency preparedness, providing guidelines for community readiness, evacuation routes, and emergency communication, as well as community training. Collaboration is encouraged among local agencies, fire departments, and community organizations to implement fire prevention and response efforts. Finally, the plan features initiatives aimed at raising public awareness about wildfire risks and prevention measures. Overall, the CWPP serves as a comprehensive roadmap for enhancing fire safety and protecting communities from wildfire threats in Santa Clara County.

Santa Clara County Emergency Operations Plan and Wildfire Annex

The Santa Clara Office of Emergency Management updated the County EOP in 2022 (Santa Clara Office of Emergency Management 2022). The EOP provides a comprehensive, single source of guidance and procedures for the County to prepare for, respond to, and manage significant or catastrophic natural or man-made threats, crises, incidents, or events that produce situations requiring a coordinated response. The Santa Clara County Emergency Operations Plan Wildfire Annex (Wildfire Annex) was last updated in 2019 (Santa Clara County Office of Emergency Management 2019), and is currently in the process of being revised as of May 2025. The Wildfire Annex is intended as a reference guide for readers to consult at key moments during preparedness and response, as well as by organizational planners during annex review and revision. In addition, the Wildfire Annex includes resources and tools available for use to successfully manage a wildfire event and includes a section on evacuation considerations. Under the procedures outlined in the Wildfire Annex, field-level Unified Command will act as the lead in evacuating the public from designated evacuation areas with support from the Santa Clara County Fire Department and other mutual aid partners.

Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) (2024)

The Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) for Santa Clara County is designed to enhance the region's resilience to various hazards, including floods, earthquakes, wildfires, and other natural disasters. The plan brings together multiple jurisdictions to collaboratively assess risks and vulnerabilities within the county. It includes a comprehensive risk assessment that identifies potential hazards and their impacts on the community. The MJHMP outlines mitigation strategies, such as infrastructure improvements, land-use planning, and public education initiatives, aimed at reducing risks. Additionally, the plan emphasizes community engagement and collaboration among local governments, agencies, and residents to effectively implement these measures. Overall, the MJHMP serves as a proactive approach to minimize future disaster impacts and promote safer, more resilient communities throughout Santa Clara County.

Campbell

Envision Campbell General Plan Update 2040 (2023)

Safety Element

Goal SA-3: Protect the safety of life and property throughout the community by ensuring emergency preparedness.

Action SA-3.f: As part of the development review process, continue to consult with the police and fire departments in order to ensure that the project provides adequate emergency access.

Goal SA-4: Maintain a safe community through adequate, efficient, and high quality police, fire, and emergency services.

Goal SA-4.6: Ensure that fire and emergency medical services meet existing and future demand.

Goal SA-4.7: Ensure that adequate water supplies are available for fire suppression throughout the City. Require development to construct and fund all fire suppression infrastructure and equipment needed to provide adequate fire protection services.

Emergency Operations Plan (EOP)

The City of Campbell's Emergency Operations Plan (EOP) outlines coordinated responses to emergency situations, including wildfires. The plan includes protocols for identifying high-risk areas, implementing evacuation procedures, and establishing communication strategies to keep the community informed during a wildfire event. It also emphasizes inter-agency collaboration with local fire departments and emergency services to ensure efficient response and resource allocation. Additionally, the EOP incorporates public education initiatives to raise awareness about wildfire risks and preparedness measures. By integrating these elements, the EOP enhances the city's capacity to prevent and respond to wildfires, ultimately protecting residents and property.

Cupertino

Cupertino General Plan: Community Vision 2015-2040 (2014)

Health and Safety Element

Goal HS-1: Reduce hazard risks through regional coordination and mitigation planning.

Policy HS-1.1: Coordinate with Santa Clara County and local agencies to implement the Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) for Santa Clara County.

Goal HS-2: Ensure a high level of emergency preparedness for natural and human-caused disasters.

Goal HS-3: Protect the community from hazards associated with wildland and urban fires.

Policy HS-3.1: Regional Coordination. Coordinate wildland fire prevention efforts with adjacent jurisdictions. Encourage the County and the Midpeninsula Open Space District to implement measures to reduce fire hazards, including putting into effect the fire reduction policies of the County Public Safety Element, continuing efforts in fuel management, and considering the use of "green" fire break uses for open space lands.

Policy HS-3.2: Early Project Review. Involve the Fire Department in the early design stage of all projects requiring public review to assure Fire Department input and modifications as needed.

Gilroy

City of Gilroy 2040 General Plan (2020)

Public Facilities and Services

Goal PFS 10: Provide for public health and safety by offering high quality fire and emergency-response services.

Potential Hazards

Goal PH 4: Protect life and minimize potential property damage from wildfires in the wildland/urban interface area and hazardous fire areas.

Policy PH 4.1: Fire Hazard Severity Zones. Ensure development in the Gilroy wildland/urban interface area conforms to the most current standards for wildfire protection.

Policy PH 4.5: Fire Safety Education and Training. Provide information on wildfire safety and prevention to raise public awareness on fire hazard issues and encourage preventive measures.

Los Altos

Los Altos General Plan 2002-2020 (2002)

Open Space, Conservation, and Community Facilities Element

Goal 6: Ensure an adequate level of fire protection and police protection within Los Altos.

Policy 6.3: Provide response times for police and fire protection services emergencies that are comparable to similar jurisdictions in Santa Clara County.

Policy 6.4: Continue cooperative mutual aid agreements with nearby jurisdictions to ensure rapid and sufficient response to emergency situations.

Town of Los Altos Hills

Town of Los Altos Hills General Plan Update (2007)

Safety Element

Goal 4: Strive to prevent and reduce potential damage related to fire hazards.

Program 4.1: Continue to cooperate with the Santa Clara County Fire Department in undertaking programs to minimize the fire hazards in the Town, particularly in remote areas with heavy vegetation.

Program 4.2: Continue to refer plans for proposed site development projects to the Santa Clara County Fire Department for review and comment.

Program 4.4: Work with water purveyors, the Los Altos Hills County Fire District and the Santa Clara County Fire Department to ensure the availability of adequate water, particularly during peak load periods, to meet firefirefighting needs.

Program 4.7: Emergency access roads shall be maintained by the Los Altos Hills County Fire District according to District fire road standards and consistent with pathway requirements.

Goal 7: Provide quick, coordinated response to emergencies.

Policy 7.1 Minimize damage from all hazards through planning for emergency management.

Town of Los Gatos

Los Gatos 2040 General Plan (2022)

Hazards and Safety Element

Goal HAZ-1: Ensure the community is prepared for health, natural, and human-caused hazards and can respond quickly and effectively.

Goal HAZ-2: Incorporate fire safety precautions as an integral consideration in planning development.

Policy HAZ-2.6: Vegetative Hazards. Reduce the wildfire risks to existing and newly developed transportation networks through regular clearance and maintenance of vegetation adjacent to public roadways to current State and/or locally adopted fire safety standards for vegetation clearance in SRA's or VHFHSZ's.

Goal HAZ-3: Reduce the potential for injuries, damage to property, economic and social displacement, and loss of life resulting from fire hazards.

Policy HAZ-3.1: Fire Hazard Preparedness. Minimize exposure to wildland and urban fire hazards through proactive code enforcement, public education programs, use of modern fire prevention measures, quick and safe access for emergency equipment and evacuation, and emergency management preparation.

Policy HAZ-3.5 Flammable Vegetative Material. Monitor and remove excessive buildup of flammable vegetative materials on Town properties and along public and private ingress/egress routes within the SRA and or the VHFHSZ's.

Milpitas

Milpitas 2040 General Plan (2021)

Safety Element

Goal SA-3: Enhance safety throughout the community by ensuring emergency preparedness.

Policy SA 3-6: Maintain effective mutual aid agreements for fire, medical response, and other functions as appropriate.

Action SA-3a: Coordinate with the Santa Clara County Office of Emergency Services (OES) and other local agencies, as necessary, to participate in and implement the Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) for Santa Clara County.

Action SA-3e: As part of the development review process, consult with the police and fire departments in order to ensure that the project provides adequate emergency access.

Goal SA-4: Maintain a safe community by providing, efficient and high-quality police, fire, and emergency services.

Policy SA 4-8: Continue to work cooperatively with state, regional, and local public agencies with responsibility for fire protection in hillside areas.

Monte Sereno

Monte Sereno General Plan (2008)

Health and Safety Element

Goal HS-1: Prevent and reduce risks to property and protect residents from urban and wildfire hazard.

Policy HS-1.1: Cooperate with Central Fire District in providing fire protection facilities needed to maintain or improve existing fire protection standards.

Policy HS-1.5: Work with the San Jose Water District to ensure that infrastructure and water pressure are sufficient for fire protection in all areas of Monte Sereno including high risk areas such as the hillside and Foothill neighborhoods.

Policy HS-1.8: Require all new development to be constructed according to fire safety conformance standards and with all related regulations.

Policy HS-1.10: Require property owners to remove fire hazards, including vegetation, hazardous structures and materials, and debris.

Morgan Hill

Morgan Hill 2035 General Plan (2016)

Safety, Services, and Infrastructure Element

Goal SSI-1: Development that avoids or minimizes risks from environmental hazards.

Goal SSI-3: Minimal threat to persons, property, and the environment from fire hazards.

Policy SSI-3.1: Development in Fire Hazard Areas. Minimize development in fire hazard areas and plan and construct permitted development so as to reduce exposure to fire hazards and to facilitate fire suppression efforts in the event of a wildfire. (South County Joint Area Plan 15.04).

Policy SSI-3.2: Wildfire Risks. Avoid actions which increase fire risk, such as increasing public access roads in fire hazard areas, because of the great environmental damage and economic loss associated with a large wildfire. (South County Joint Area Plan 15.04).

Policy SSI-3.3: Public Facilities Location. Locate, when feasible, new essential public facilities outside of high fire risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, or identify construction methods or other methods to minimize damage if these facilities are located in a state responsibility area or very high fire hazard severity zone.

Policy SSI-3.4: Adequate Infrastructure. Design adequate infrastructure if a new development is located in a state responsibility area (SRA) or in a very high fire hazard severity zone (VHFHSZ) or high fire hazard severity zone (HFHSZ) as indicated on the City of Morgan Hill Wildland Urban Interface map (adopted March 18, 2009), including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.

Policy SSI-3.5: Fire Risks. Work cooperatively with CAL FIRE and other public agencies with responsibility for fire protection to reduce fire risks in Morgan Hill.

Policy SSI-3.6: Fire Hazard Severity Zones. Continue to support special High Fire Hazard Severity Zone requirements.

Goal SSI-11: Efficient police, fire, and emergency medical response and services, and access to local medical facilities.

Goal SSI-12: Reduce risk to life and property associated with emergencies and natural and manmade disasters.

Mountain View

Mountain View 2030 General Plan (2012)

Public Safety

Goal PSA-1: A high level of community safety with police, fire and emergency response services that meet or exceed industry-accepted service standards.

Policy PSA 1.1: Adequate staffing. Maintain adequate police and fire staffing, performance levels and facilities to serve the needs of the community.

Goal PSA-3: A community protected from fire, hazardous materials, and environmental contamination.

Policy PSA 3.1: Minimized losses. Minimize property damage, injuries, and loss of life from fire.

Policy PSA 3.2: Protection from hazardous materials. Prevent injuries and environmental contamination due to the uncontrolled release of hazardous materials through prevention and enforcement of fire and life safety codes.

Policy PSA 3.5: Peak water supply. Ensure sufficient peak-load water supply to address fire and emergency response needs when approving new development.

Goal PSA-4: A well-prepared community that has developed plans to minimize risks from environmental and human-induced disasters.

Palo Alto

Palo Alto Comprehensive Plan 2030 (2017)

Safety Element

Goal S-2: Protection of life, ecosystems and property from natural hazards and disasters, including earthquake, landslide, flooding, and fire.

Policy S-2.1: Incorporate the City's Local Hazard Mitigation and Adaptation Plan (LHMP), as periodically adopted by the City Council and certified by

the Federal Emergency Management Agency (FEMA), into the Safety Element. In the event of any conflict between the provisions of the LHMP and any other provision of the Safety Element, the LHMP shall control.

Policy S-2.13: Minimize exposure to wildland and urban fire hazards through rapid emergency response, proactive code enforcement, public education programs, use of modern fire prevention measures and adequate emergency management preparation.

Policy S-2.14: Require that the planning and design of development in areas exposed to wildland fire hazards minimize the risks of wildfire and include adequate provisions for vegetation management, emergency access and firefighting.

Program S2.14.1: Regularly review and fund updates to the Palo Alto Foothills Fire Management Plan to ensure consistency with current standards and Best Management Practices.

Program S2.14.2: Implement the Foothills Fire Management Plan to balance conservation of natural resources with reduction of fire hazards especially in open space areas.

Program S2.14.4: Work collaboratively with other jurisdictions and agencies to reduce wildfire hazards in and around Palo Alto, with an emphasis on effective vegetation management and mutual aid agreements.

Program S2.14.5: Consider implementation of CAL FIRE recommended programs in educating and involving the local community to diminish potential loss caused by wildfire and identify prevention measures to reduce those risks.

Policy S-2.15: Provide emergency fire and medical services consistent with the response time standards set forth in the Fire Department's annual budget.

Program S2.16.1: Provide public education on fire safety, including wildland and structural fire prevention, evacuation routes and guidelines for clearance of landscaping and other hazards around structures.

San José

Envision San José 2040 General Plan (2011)

Environmental Leadership

Goal EC-8: Wildland and Urban Fire Hazards. Protect lives and property from risks associated with fire-related emergencies at the urban/wildland interface.

Policy EC-8.1: Minimize development in very high fire hazard zone areas. Plan and construct permitted development so as to reduce exposure to fire hazards and to facilitate f ire suppression efforts in the event of a wildfire.

Policy EC-8.2: Avoid actions which increase fire risk, such as increasing public access roads in very high fire hazard areas, because of the great environmental damage and economic loss associated with a large wildfire.

Policy EC-8.4: Require use of defensible space vegetation management best practices to protect structures at and near the urban/wildland interface.

Policy EC-8.6 Provide information to the public on fire hazard reduction in cooperation with local, regional, and state agencies, including the County of Santa Clara Fire Safe Council.

Quality of Life

Goal ES-3: Law Enforcement and Fire Protection Provide high-quality law enforcement and fire protection services to the San José community to protect life, property and the environment through fire and crime prevention and response. Utilize land use planning, urban design and site development measures and partnerships with the community and other public agencies to support long-term community health, safety and well-being.

Policy ES-3.1 (5): Ensure that development of police and fire service facilities and delivery of services keeps pace with development and growth in the city.

Policy ES-3.2: Strive to ensure that equipment and facilities are provided and maintained to meet reasonable standards of safety, dependability, and compatibility with law enforcement and fire service operations.

Policy ES-3.19: Remove excessive/overgrown vegetation (e.g., trees, shrubs, weeds) and rubbish from City-owned property to prevent and minimize fire risks to surrounding properties.

Policy ES-4.8: Promote awareness and caution among San José residents regarding possible natural hazards, including soil conditions, earthquakes, flooding, and fire hazards.

Santa Clara

City of Santa Clara 2010 – 2035 General Plan (2010)

Public Services

Goal 5.9.3-G1: A safe and secure environment for people and property in the community.

Policy 5.9.3-P6: Maintain the fire and hazardous materials mutual aid agreements with surrounding jurisdictions.

Saratoga

City of Saratoga 2040 General Plan (2024)

Safety Element

Goal SAF-4: Ensure the community is better equipped to address vulnerabilities associated with urban and wildland fires.

Policy SAF-4.2: Coordinate with the Santa Clara County Fire Safe Council on preventing and reducing future losses from wildfires.

Policy SAF-4.5: Continue to enforce existing regulations pertaining to hazardous fire areas (wildland-urban interface), fire retardant construction and landscaping (fuel modification).

Policy SAF-4.11: Require fire protection plans (consistent with requirements of the California Fire Code, including a risk analysis, fire response capabilities, fire safety requirements (defensible space, infrastructure, and building ignition resistance), mitigation measures and design considerations for non-conforming fuel modifications, wildfire education maintenance and limitations, and evacuation plans for new development and major remodels in Very High Fire Hazard Severity Zones (VHFHSZ) and Wildland-Urban Interface (WUI) areas designated by the City and CAL FIRE.

Policy SAF-4.15: Require the sites of all developments located in the WUI and VHFHSZ to meet or exceed statewide Fire Safe Regulations (title 14, CCR, division 1.5, chapter 7, subchapter 2, articles 1-5 (commencing with section 1270) (SRA Fire Safe Regulations) and title 14, CCR, division 1.5, chapter 7, subchapter 3, article 3 (commencing with section 1299.01) (Fire Hazard Reduction Around Buildings and Structures Regulations)).

Policy SAF-4.16: Ensure open space brush areas, susceptible to wildfire risk, are adequately maintained in accordance with fire safe regulations.

Policy SAF-4.17: Maintain and adequately fund fuel breaks and other fire defense improvements on City property and require similar measures for private property in compliance with fire safe regulations.

Policy SAF-4.18: Coordinate with local and regional agencies (Santa Clara County Fire Department, CAL FIRE, Cal Trans, etc.) and require vegetation clearance and long-term maintenance of fire hazard reduction projects (including community fire breaks) on all private and public roads and properties in the WUI and in fire hazard severity zones.

Policy SAF-4.19: Provide adequate clearance around structures to prevent the spread of fire by direct exposure and to assure adequate access in times of emergency and for the suppression of fire.

Goal SAF-5: A community that promotes a culture of preparedness and is ready to respond to future natural and human caused hazard events.

Policy SAF-5.1: Ensure the City's emergency preparedness efforts and resources are prioritized to better protect residents and businesses.

Policy SAF-5.2: Coordinate emergency management planning with local jurisdictions and regional agencies to anticipate cumulative impacts during times of disaster.

Policy SAF-5.5: Support enhancements to fire service through the maintenance of fire equipment and the training of fire personnel.

Sunnyvale

Sunnyvale General Plan 2030 (2011)

Safety Element

Goal SN-1: Acceptable Levels of Risk for Natural and Human-Caused Hazards. Ensure that natural and human-caused hazards are recognized and considered in decisions affecting the community and that land uses reflect acceptable levels of risk based on identified hazards and occupancy.

Policy SN-2.2: Provide for the emergency management of the City in order to respond effectively and to assure life and property safety in the event of a disaster.

Goal SN-3: Safe and Secure City. Ensure a safe and secure environment for people and property in the community by providing effective public safety response and prevention and education services.

Goal SN-5: Effective Fire Service Response System. Provide a fire service response system that will control the spread of fire in building and other properties and maintain minimal casualties and property loss from fire and other related emergencies.

Policy SN-5.1: Assure that equipment and facilities are provided and maintained to meet reasonable standards of safety, dependability, and compatibility with fire service operations.

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Appendix D

Air Quality and GHG Emission Calculations

Existing SMP Annual Emissions

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SMP3 Existing
Operational Year	2023
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	1.60
Location	37.338881773033066, -121.90339086898345
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1800
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	1.00	0.00	1.00	1.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	81.6	74.6	204	551	0.65	10.1	0.00	10.1	10.1	0.00	10.1	0.00	69,428	69,428	2.80	0.55	0.00	69,663
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	81.6	74.6	204	551	0.65	10.1	0.00	10.1	10.1	0.00	10.1	0.00	69,428	69,428	2.80	0.55	0.00	69,663
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	20.6	18.9	39.7	212	0.16	1.94	259	260	1.92	25.9	27.8	0.00	17,047	17,047	0.74	0.30	2.52	17,157
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.76	3.44	7.24	38.7	0.03	0.35	47.2	47.5	0.35	4.72	5.07	0.00	2,822	2,822	0.12	0.05	0.42	2,841

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	8.11	7.48	1.52	195	0.01	0.07	—	0.07	0.05	—	0.05	—	422	422	0.02	< 0.005	—	423
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	3.56	3.56	24.9	190	0.34	0.69	—	0.69	0.69	—	0.69	—	36,464	36,464	1.48	0.30	—	36,589
Stationary	69.9	63.6	178	166	0.31	9.36	0.00	9.36	9.36	0.00	9.36	0.00	32,542	32,542	1.31	0.25	0.00	32,650
Total	81.6	74.6	204	551	0.65	10.1	0.00	10.1	10.1	0.00	10.1	0.00	69,428	69,428	2.80	0.55	0.00	69,663
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	8.11	7.48	1.52	195	0.01	0.07	—	0.07	0.05	—	0.05	—	422	422	0.02	< 0.005	—	423
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	3.56	3.56	24.9	190	0.34	0.69	—	0.69	0.69	—	0.69	—	36,464	36,464	1.48	0.30	—	36,589
Stationary	69.9	63.6	178	166	0.31	9.36	0.00	9.36	9.36	0.00	9.36	0.00	32,542	32,542	1.31	0.25	0.00	32,650
Total	81.6	74.6	204	551	0.65	10.1	0.00	10.1	10.1	0.00	10.1	0.00	69,428	69,428	2.80	0.55	0.00	69,663
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.44	0.33	1.67	4.02	0.02	0.02	259	259	0.02	25.9	25.9	—	1,708	1,708	0.12	0.18	2.52	1,766
Area	6.81	6.28	1.04	131	< 0.005	0.07	—	0.07	0.05	—	0.05	—	284	284	0.01	< 0.005	—	285
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.88	0.88	5.19	46.2	0.09	0.17	—	0.17	0.17	—	0.17	—	9,240	9,240	0.37	0.07	—	9,271

Stationa	12.5	11.4	31.8	30.7	0.05	1.67	0.00	1.67	1.67	0.00	1.67	0.00	5,815	5,815	0.23	0.05	0.00	5,834
Total	20.6	18.9	39.7	212	0.16	1.94	259	260	1.92	25.9	27.8	0.00	17,047	17,047	0.74	0.30	2.52	17,157
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.08	0.06	0.30	0.73	< 0.005	< 0.005	47.2	47.2	< 0.005	4.72	4.72	—	283	283	0.02	0.03	0.42	292
Area	1.24	1.15	0.19	23.9	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.1	47.1	< 0.005	< 0.005	—	47.3
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Roa d	0.16	0.16	0.95	8.43	0.02	0.03	—	0.03	0.03	—	0.03	—	1,530	1,530	0.06	0.01	—	1,535
Stationa ry	2.28	2.07	5.80	5.60	0.01	0.31	0.00	0.31	0.31	0.00	0.31	0.00	963	963	0.04	0.01	0.00	966
Total	3.76	3.44	7.24	38.7	0.03	0.35	47.2	47.5	0.35	4.72	5.07	0.00	2,822	2,822	0.12	0.05	0.42	2,841

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	8.11	7.48	1.52	195	0.01	0.07	—	0.07	0.05	—	0.05	—	422	422	0.02	< 0.005	—	423
Total	8.11	7.48	1.52	195	0.01	0.07	—	0.07	0.05	—	0.05	—	422	422	0.02	< 0.005	—	423
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	8.11	7.48	1.52	195	0.01	0.07	—	0.07	0.05	—	0.05	—	422	422	0.02	< 0.005	—	423
Total	8.11	7.48	1.52	195	0.01	0.07	—	0.07	0.05	—	0.05	—	422	422	0.02	< 0.005	—	423
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.24	1.15	0.19	23.9	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.1	47.1	< 0.005	< 0.005	—	47.3
Total	1.24	1.15	0.19	23.9	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.1	47.1	< 0.005	< 0.005	—	47.3

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Construction Equipment	0.35	0.35	1.81	18.1	0.03	0.07	—	0.07	0.07	—	0.07	—	3,665	3,665	0.15	0.03	—	3,678
Off-Highway Trucks	2.04	2.04	10.6	106	0.20	0.41	—	0.41	0.41	—	0.41	—	21,559	21,559	0.87	0.17	—	21,633
Other General Industrial Equipment	0.03	0.03	0.91	1.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	176	176	0.01	< 0.005	—	176
Excavators	0.42	0.42	3.60	22.7	0.04	0.08	—	0.08	0.08	—	0.08	—	4,221	4,221	0.17	0.03	—	4,236
Skid Steer Loaders	0.10	0.10	3.01	4.06	0.01	0.01	—	0.01	0.01	—	0.01	—	579	579	0.02	< 0.005	—	581
Off-Highway Tractors	0.22	0.22	1.13	11.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,288	2,288	0.09	0.02	—	2,296
Forklifts	0.01	0.01	0.06	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	114	114	< 0.005	< 0.005	—	115
Rubber Tired Loaders	0.03	0.03	0.14	1.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	276	276	0.01	< 0.005	—	277
Crawler Tractors	0.05	0.05	0.25	3.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	510	510	0.02	< 0.005	—	512
Sweepers/Scrubbers	0.02	0.02	0.60	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	129	129	0.01	< 0.005	—	129
Graders	0.08	0.08	0.44	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	895	895	0.04	0.01	—	898
Rollers	0.13	0.13	1.68	8.12	0.01	0.02	—	0.02	0.02	—	0.02	—	1,159	1,159	0.05	0.01	—	1,163
Aerial Lifts	0.01	0.01	0.28	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	60.2	60.2	< 0.005	< 0.005	—	60.4
Tractors/Loaders/Backhoes	0.08	0.08	0.41	5.85	0.01	0.02	—	0.02	0.02	—	0.02	—	831	831	0.03	0.01	—	834
Total	3.56	3.56	24.9	190	0.34	0.69	—	0.69	0.69	—	0.69	—	36,464	36,464	1.48	0.30	—	36,589

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Construction Equipment	0.35	0.35	1.81	18.1	0.03	0.07	—	0.07	0.07	—	0.07	—	3,665	3,665	0.15	0.03	—	3,678
Off-Highway Trucks	2.04	2.04	10.6	106	0.20	0.41	—	0.41	0.41	—	0.41	—	21,559	21,559	0.87	0.17	—	21,633
Other General Industrial Equipment	0.03	0.03	0.91	1.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	176	176	0.01	< 0.005	—	176
Excavators	0.42	0.42	3.60	22.7	0.04	0.08	—	0.08	0.08	—	0.08	—	4,221	4,221	0.17	0.03	—	4,236
Skid Steer Loaders	0.10	0.10	3.01	4.06	0.01	0.01	—	0.01	0.01	—	0.01	—	579	579	0.02	< 0.005	—	581
Off-Highway Tractors	0.22	0.22	1.13	11.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,288	2,288	0.09	0.02	—	2,296
Forklifts	0.01	0.01	0.06	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	114	114	< 0.005	< 0.005	—	115
Rubber Tired Loaders	0.03	0.03	0.14	1.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	276	276	0.01	< 0.005	—	277
Crawler Tractors	0.05	0.05	0.25	3.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	510	510	0.02	< 0.005	—	512
Sweepers/Scrubbers	0.02	0.02	0.60	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	129	129	0.01	< 0.005	—	129
Graders	0.08	0.08	0.44	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	895	895	0.04	0.01	—	898
Rollers	0.13	0.13	1.68	8.12	0.01	0.02	—	0.02	0.02	—	0.02	—	1,159	1,159	0.05	0.01	—	1,163
Aerial Lifts	0.01	0.01	0.28	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	60.2	60.2	< 0.005	< 0.005	—	60.4

Tractors/ Loaders/ Backhoes	0.08	0.08	0.41	5.85	0.01	0.02	—	0.02	0.02	—	0.02	—	831	831	0.03	0.01	—	834
Total	3.56	3.56	24.9	190	0.34	0.69	—	0.69	0.69	—	0.69	—	36,464	36,464	1.48	0.30	—	36,589
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Construction Equipment	0.01	0.01	0.04	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	80.6	80.6	< 0.005	< 0.005	—	80.9
Off-Highway Trucks	0.13	0.13	0.69	6.86	0.01	0.03	—	0.03	0.03	—	0.03	—	1,264	1,264	0.05	0.01	—	1,269
Other General Industrial Equipment	< 0.005	< 0.005	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.09	9.09	< 0.005	< 0.005	—	9.12
Excavators	0.01	0.01	0.04	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	65.1	65.1	< 0.005	< 0.005	—	65.3
Skid Steer Loaders	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.36	5.36	< 0.005	< 0.005	—	5.38
Off-Highway Tractors	0.01	0.01	0.04	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.8	76.8	< 0.005	< 0.005	—	77.1
Forklifts	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Rubber Tired Loaders	< 0.005	< 0.005	< 0.005	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.25	7.25	< 0.005	< 0.005	—	7.28
Crawler Tractors	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.08	2.08	< 0.005	< 0.005	—	2.09
Sweepers/Scrubbers	< 0.005	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.06	7.06	< 0.005	< 0.005	—	7.08
Graders	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.81	0.81	< 0.005	< 0.005	—	0.82
Rollers	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.00	2.00	< 0.005	< 0.005	—	2.01

Aerial Lifts	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Tractors/ Loaders/ Backhoes	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.23	9.23	< 0.005	< 0.005	—	9.26
Total	0.16	0.16	0.95	8.43	0.02	0.03	—	0.03	0.03	—	0.03	—	1,530	1,530	0.06	0.01	—	1,535

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	69.9	63.6	178	166	0.31	9.36	0.00	9.36	9.36	0.00	9.36	0.00	32,542	32,542	1.31	0.25	0.00	32,650
Total	69.9	63.6	178	166	0.31	9.36	0.00	9.36	9.36	0.00	9.36	0.00	32,542	32,542	1.31	0.25	0.00	32,650
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	69.9	63.6	178	166	0.31	9.36	0.00	9.36	9.36	0.00	9.36	0.00	32,542	32,542	1.31	0.25	0.00	32,650
Total	69.9	63.6	178	166	0.31	9.36	0.00	9.36	9.36	0.00	9.36	0.00	32,542	32,542	1.31	0.25	0.00	32,650
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency Generator	2.28	2.07	5.80	5.60	0.01	0.31	0.00	0.31	0.31	0.00	0.31	0.00	963	963	0.04	0.01	0.00	966
Total	2.28	2.07	5.80	5.60	0.01	0.31	0.00	0.31	0.31	0.00	0.31	0.00	963	963	0.04	0.01	0.00	966

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	47,838	0.00	0.00	0.00	507,800

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

Equipment Type	Fuel Type	Number Per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Riding Mowers	Gasoline 4-Stroke	1.00	6.00	150	21.4	0.38
Riding Mowers	Gasoline 4-Stroke	1.00	6.00	720	21.4	0.38
Other Lawn & Garden Equipment	Gasoline 4-Stroke	1.00	6.00	60.0	6.09	0.58
Chainsaws	Gasoline 2-Stroke	4.00	6.00	2,190	1.86	0.70
Leaf Blowers/Vacuums	Gasoline 4-Stroke	4.00	6.00	2,190	4.50	0.94
Trimmers/Edgers/Brush Cutters	Gasoline 4-Stroke	4.00	6.00	2,190	1.74	0.91

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Recreational	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Recreational	0.00	23.8

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Recreational	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Other Construction Equipment	Diesel	Tier 4 Final	1.00	7.50	500	0.42

Other Construction Equipment	Diesel	Tier 4 Final	1.00	7.50	500	0.42
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	450	0.38
Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	6.00	74.0	0.34
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	425	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	510	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	450	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	110	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	204	0.38
Skid Steer Loaders	Diesel	Tier 4 Final	1.00	6.00	74.0	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	310	0.38
Skid Steer Loaders	Diesel	Tier 4 Final	1.00	6.00	74.0	0.37
Off-Highway Tractors	Diesel	Tier 4 Final	1.00	7.50	600	0.44
Skid Steer Loaders	Diesel	Tier 4 Final	1.00	6.00	74.3	0.37
Excavators	Diesel	Tier 4 Final	1.00	6.00	48.4	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	74.3	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	279	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	110	0.38
Forklifts	Diesel	Tier 4 Final	1.00	6.00	82.0	0.20
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	600	0.38
Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	6.00	110	0.36
Crawler Tractors	Diesel	Tier 4 Final	1.00	6.00	170	0.43
Excavators	Diesel	Tier 4 Final	1.00	6.00	242	0.38
Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	6.00	36.0	0.46
Graders	Diesel	Tier 4 Final	1.00	7.50	250	0.41
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	375	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	4.00	7.50	510	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	600	0.38

Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	375	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	242	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	275	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	44.0	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	46.0	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	75.0	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	134	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	128	0.38
Aerial Lifts	Diesel	Tier 4 Final	1.00	6.00	25.0	0.31
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	6.00	160	0.37
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	6.00	163	0.37
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	360	0.38

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	24.0	1,776	536	0.73
Emergency Generator	Diesel	1.00	24.0	696	375	0.73
Emergency Generator	Diesel	1.00	24.0	2,616	201	0.73
Emergency Generator	Diesel	1.00	24.0	3,528	101	0.73
Emergency Generator	Diesel	1.00	24.0	1,080	402	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

8. User Changes to Default Data

Screen	Justification
Land Use	Set all to one as not using any values based on size metric
Operations: Fleet Mix	Adjusted based on vehicle mix of LDA, LDT1,2 and HHDT as reported in traffic study
Operations: Road Dust	assumed about 25% of roads unpaved.
Operations: Consumer Products	adjusted pesticides to zero as down outside of program. zero out parking degreaser as not relevant.
Operations: Architectural Coatings	no coatings for operations
Operations: Landscape Equipment	site specific information provided.
Operations: Off-Road Equipment	site specific information based on 2023 equipment use. Since no LPG values entered as diesel.
Operations: Emergency Generators and Fire Pumps	horsepower given by Valley Water

Program Renewal Annual Emissions

Program Renewal Annual Emissions

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1.1. Basic Project Information

Data Field	Value
Project Name	SMP3 v2
Operational Year	2026
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	1.60
Location	37.338881773033066, -121.90339086898345
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1800
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	1.00	0.00	1.00	1.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	95.7	87.7	230	1,005	0.80	11.3	0.00	11.3	11.3	0.00	11.3	0.00	85,440	85,440	3.45	0.68	0.00	85,730
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	95.7	87.7	230	1,005	0.80	11.3	0.00	11.3	11.3	0.00	11.3	0.00	85,440	85,440	3.45	0.68	0.00	85,730
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	24.3	22.2	47.1	314	0.21	2.27	259	261	2.26	25.9	28.1	0.00	22,063	22,063	0.93	0.33	2.02	22,186
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.43	4.06	8.60	57.3	0.04	0.42	47.2	47.6	0.41	4.72	5.13	0.00	3,653	3,653	0.15	0.05	0.33	3,673

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	14.2	13.1	4.38	574	0.02	0.08	—	0.08	0.06	—	0.06	—	1,195	1,195	0.05	0.01	—	1,199
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	4.68	4.68	29.9	248	0.45	0.92	—	0.92	0.92	—	0.92	—	48,462	48,462	1.97	0.39	—	48,628
Stationary	76.9	69.9	196	183	0.34	10.3	0.00	10.3	10.3	0.00	10.3	0.00	35,783	35,783	1.44	0.28	0.00	35,903
Total	95.7	87.7	230	1,005	0.80	11.3	0.00	11.3	11.3	0.00	11.3	0.00	85,440	85,440	3.45	0.68	0.00	85,730
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	14.2	13.1	4.38	574	0.02	0.08	—	0.08	0.06	—	0.06	—	1,195	1,195	0.05	0.01	—	1,199
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	4.68	4.68	29.9	248	0.45	0.92	—	0.92	0.92	—	0.92	—	48,462	48,462	1.97	0.39	—	48,628
Stationary	76.9	69.9	196	183	0.34	10.3	0.00	10.3	10.3	0.00	10.3	0.00	35,783	35,783	1.44	0.28	0.00	35,903
Total	95.7	87.7	230	1,005	0.80	11.3	0.00	11.3	11.3	0.00	11.3	0.00	85,440	85,440	3.45	0.68	0.00	85,730
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.37	0.27	1.47	3.36	0.02	0.02	259	259	0.02	25.9	25.9	—	1,611	1,611	0.10	0.16	2.02	1,664
Area	8.17	7.54	1.61	209	0.01	0.07	—	0.07	0.05	—	0.05	—	443	443	0.02	< 0.005	—	444
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	1.27	1.27	7.30	66.2	0.12	0.25	—	0.25	0.25	—	0.25	—	13,284	13,284	0.54	0.11	—	13,329

Stationa	14.4	13.1	36.7	35.7	0.06	1.93	0.00	1.93	1.93	0.00	1.93	0.00	6,726	6,726	0.27	0.05	0.00	6,749
Total	24.3	22.2	47.1	314	0.21	2.27	259	261	2.26	25.9	28.1	0.00	22,063	22,063	0.93	0.33	2.02	22,186
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.05	0.27	0.61	< 0.005	< 0.005	47.2	47.2	< 0.005	4.72	4.72	—	267	267	0.02	0.03	0.33	275
Area	1.49	1.38	0.29	38.1	< 0.005	0.01	—	0.01	0.01	—	0.01	—	73.3	73.3	< 0.005	< 0.005	—	73.5
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Roa d	0.23	0.23	1.33	12.1	0.02	0.05	—	0.05	0.05	—	0.05	—	2,199	2,199	0.09	0.02	—	2,207
Stationa ry	2.64	2.40	6.71	6.52	0.01	0.35	0.00	0.35	0.35	0.00	0.35	0.00	1,114	1,114	0.04	0.01	0.00	1,117
Total	4.43	4.06	8.60	57.3	0.04	0.42	47.2	47.6	0.41	4.72	5.13	0.00	3,653	3,653	0.15	0.05	0.33	3,673

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	14.2	13.1	4.38	574	0.02	0.08	—	0.08	0.06	—	0.06	—	1,195	1,195	0.05	0.01	—	1,199
Total	14.2	13.1	4.38	574	0.02	0.08	—	0.08	0.06	—	0.06	—	1,195	1,195	0.05	0.01	—	1,199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	14.2	13.1	4.38	574	0.02	0.08	—	0.08	0.06	—	0.06	—	1,195	1,195	0.05	0.01	—	1,199
Total	14.2	13.1	4.38	574	0.02	0.08	—	0.08	0.06	—	0.06	—	1,195	1,195	0.05	0.01	—	1,199
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.49	1.38	0.29	38.1	< 0.005	0.01	—	0.01	0.01	—	0.01	—	73.3	73.3	< 0.005	< 0.005	—	73.5
Total	1.49	1.38	0.29	38.1	< 0.005	0.01	—	0.01	0.01	—	0.01	—	73.3	73.3	< 0.005	< 0.005	—	73.5

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Construction Equipment	0.48	0.48	2.49	24.9	0.05	0.10	—	0.10	0.10	—	0.10	—	5,060	5,060	0.21	0.04	—	5,078
Off-Highway Trucks	2.94	2.94	15.3	153	0.29	0.59	—	0.59	0.59	—	0.59	—	31,118	31,118	1.26	0.25	—	31,224
Other General Industrial Equipment	0.03	0.03	0.91	1.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	176	176	0.01	< 0.005	—	176
Excavators	0.42	0.42	3.60	22.7	0.04	0.08	—	0.08	0.08	—	0.08	—	4,223	4,223	0.17	0.03	—	4,238
Skid Steer Loaders	0.09	0.09	2.14	4.42	0.01	0.01	—	0.01	0.01	—	0.01	—	632	632	0.03	0.01	—	634
Off-Highway Tractors	0.22	0.22	1.13	11.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,289	2,289	0.09	0.02	—	2,297
Forklifts	0.01	0.01	0.06	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	114	114	< 0.005	< 0.005	—	115
Rubber Tired Loaders	0.03	0.03	0.14	1.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	276	276	0.01	< 0.005	—	277
Crawler Tractors	0.05	0.05	0.25	3.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	510	510	0.02	< 0.005	—	512
Sweepers/Scrubbers	0.02	0.02	0.60	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	129	129	0.01	< 0.005	—	129
Graders	0.08	0.08	0.44	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	894	894	0.04	0.01	—	897
Rollers	0.13	0.13	1.68	8.12	0.01	0.02	—	0.02	0.02	—	0.02	—	1,159	1,159	0.05	0.01	—	1,163
Aerial Lifts	0.01	0.01	0.28	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	60.2	60.2	< 0.005	< 0.005	—	60.4
Tractors/Loaders/Backhoes	0.08	0.08	0.41	5.85	0.01	0.02	—	0.02	0.02	—	0.02	—	832	832	0.03	0.01	—	835
Cranes	0.09	0.09	0.49	4.88	0.01	0.02	—	0.02	0.02	—	0.02	—	990	990	0.04	0.01	—	993

Total	4.68	4.68	29.9	248	0.45	0.92	—	0.92	0.92	—	0.92	—	48,462	48,462	1.97	0.39	—	48,628
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Construction Equipment	0.48	0.48	2.49	24.9	0.05	0.10	—	0.10	0.10	—	0.10	—	5,060	5,060	0.21	0.04	—	5,078
Off-Highway Trucks	2.94	2.94	15.3	153	0.29	0.59	—	0.59	0.59	—	0.59	—	31,118	31,118	1.26	0.25	—	31,224
Other General Industrial Equipment	0.03	0.03	0.91	1.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	176	176	0.01	< 0.005	—	176
Excavators	0.42	0.42	3.60	22.7	0.04	0.08	—	0.08	0.08	—	0.08	—	4,223	4,223	0.17	0.03	—	4,238
Skid Steer Loaders	0.09	0.09	2.14	4.42	0.01	0.01	—	0.01	0.01	—	0.01	—	632	632	0.03	0.01	—	634
Off-Highway Tractors	0.22	0.22	1.13	11.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,289	2,289	0.09	0.02	—	2,297
Forklifts	0.01	0.01	0.06	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	114	114	< 0.005	< 0.005	—	115
Rubber Tired Loaders	0.03	0.03	0.14	1.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	276	276	0.01	< 0.005	—	277
Crawler Tractors	0.05	0.05	0.25	3.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	510	510	0.02	< 0.005	—	512
Sweepers/Scrubbers	0.02	0.02	0.60	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	129	129	0.01	< 0.005	—	129
Graders	0.08	0.08	0.44	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	894	894	0.04	0.01	—	897
Rollers	0.13	0.13	1.68	8.12	0.01	0.02	—	0.02	0.02	—	0.02	—	1,159	1,159	0.05	0.01	—	1,163
Aerial Lifts	0.01	0.01	0.28	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	60.2	60.2	< 0.005	< 0.005	—	60.4

Tractors/ Loaders/	0.08	0.08	0.41	5.85	0.01	0.02	—	0.02	0.02	—	0.02	—	832	832	0.03	0.01	—	835
Cranes	0.09	0.09	0.49	4.88	0.01	0.02	—	0.02	0.02	—	0.02	—	990	990	0.04	0.01	—	993
Total	4.68	4.68	29.9	248	0.45	0.92	—	0.92	0.92	—	0.92	—	48,462	48,462	1.97	0.39	—	48,628
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Construction Equipment	0.01	0.01	0.06	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	105	105	< 0.005	< 0.005	—	106
Off-Highway Trucks	0.19	0.19	1.00	10.0	0.02	0.04	—	0.04	0.04	—	0.04	—	1,853	1,853	0.08	0.02	—	1,859
Other General Industrial Equipment	< 0.005	< 0.005	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.7	11.7	< 0.005	< 0.005	—	11.8
Excavators	0.01	0.01	0.06	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	85.7	85.7	< 0.005	< 0.005	—	86.0
Skid Steer Loaders	< 0.005	< 0.005	0.02	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.09	7.09	< 0.005	< 0.005	—	7.11
Off-Highway Tractors	0.01	0.01	0.05	0.54	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	99.1	99.1	< 0.005	< 0.005	—	99.5
Forklifts	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Rubber Tired Loaders	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.36	9.36	< 0.005	< 0.005	—	9.39
Crawler Tractors	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.68	2.68	< 0.005	< 0.005	—	2.69
Sweepers/Scrubbers	< 0.005	< 0.005	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.10	9.10	< 0.005	< 0.005	—	9.13
Graders	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Rollers	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.58	2.58	< 0.005	< 0.005	—	2.59

Aerial Lifts	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Tractors/ Loaders/ Backhoes	< 0.005	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Cranes	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Total	0.23	0.23	1.33	12.1	0.02	0.05	—	0.05	0.05	—	0.05	—	2,199	2,199	0.09	0.02	—	2,207

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	76.9	69.9	196	183	0.34	10.3	0.00	10.3	10.3	0.00	10.3	0.00	35,783	35,783	1.44	0.28	0.00	35,903
Total	76.9	69.9	196	183	0.34	10.3	0.00	10.3	10.3	0.00	10.3	0.00	35,783	35,783	1.44	0.28	0.00	35,903
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	76.9	69.9	196	183	0.34	10.3	0.00	10.3	10.3	0.00	10.3	0.00	35,783	35,783	1.44	0.28	0.00	35,903
Total	76.9	69.9	196	183	0.34	10.3	0.00	10.3	10.3	0.00	10.3	0.00	35,783	35,783	1.44	0.28	0.00	35,903
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency Generat	2.64	2.40	6.71	6.52	0.01	0.35	0.00	0.35	0.35	0.00	0.35	0.00	1,114	1,114	0.04	0.01	0.00	1,117
Total	2.64	2.40	6.71	6.52	0.01	0.35	0.00	0.35	0.35	0.00	0.35	0.00	1,114	1,114	0.04	0.01	0.00	1,117

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	—	—	—	47,838	—	—	—	507,800

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

Equipment Type	Fuel Type	Number Per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Riding Mowers	Gasoline 4-Stroke	1.00	6.00	150	25.0	0.38
Riding Mowers	Gasoline 4-Stroke	1.00	6.00	720	155	0.38
Other Lawn & Garden Equipment	Gasoline 4-Stroke	1.00	6.00	120	74.0	0.58
Chainsaws	Gasoline 2-Stroke	4.00	6.00	2,190	1.86	0.70
Leaf Blowers/Vacuums	Gasoline 4-Stroke	4.00	6.00	2,190	4.50	0.94
Trimmers/Edgers/Brush Cutters	Gasoline 4-Stroke	4.00	6.00	2,190	1.74	0.91

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Recreational	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Recreational	0.00	23.8

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Recreational	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Other Construction Equipment	Diesel	Tier 4 Final	1.00	7.50	500	0.42

Other Construction Equipment	Diesel	Tier 4 Final	1.00	7.50	500	0.42
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	450	0.38
Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	6.00	74.0	0.34
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	425	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	510	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	2.00	7.50	450	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	110	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	204	0.38
Skid Steer Loaders	Diesel	Tier 4 Final	1.00	6.00	74.0	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	310	0.38
Skid Steer Loaders	Diesel	Tier 4 Final	1.00	6.00	94.0	0.37
Off-Highway Tractors	Diesel	Tier 4 Final	1.00	7.50	600	0.44
Skid Steer Loaders	Diesel	Tier 4 Final	1.00	6.00	74.3	0.37
Excavators	Diesel	Tier 4 Final	1.00	6.00	48.4	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	74.3	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	279	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	110	0.38
Forklifts	Diesel	Tier 4 Final	1.00	6.00	82.0	0.20
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	600	0.38
Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	6.00	110	0.36
Crawler Tractors	Diesel	Tier 4 Final	1.00	6.00	170	0.43
Excavators	Diesel	Tier 4 Final	1.00	6.00	242	0.38
Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	6.00	36.0	0.46
Graders	Diesel	Tier 4 Final	1.00	7.50	250	0.41
Off-Highway Trucks	Diesel	Tier 4 Final	2.00	7.50	375	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	8.00	7.50	510	0.38
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	600	0.38

Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	375	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	242	0.38
Excavators	Diesel	Tier 4 Final	1.00	6.00	275	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	44.0	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	46.0	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	75.0	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	134	0.38
Rollers	Diesel	Tier 4 Final	1.00	6.00	128	0.38
Aerial Lifts	Diesel	Tier 4 Final	1.00	6.00	25.0	0.31
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	6.00	160	0.37
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	6.00	163	0.37
Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.50	360	0.38
Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	355	0.42
Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	24.0	1,362	536	0.73
Emergency Generator	Diesel	1.00	24.0	929	536	0.73
Emergency Generator	Diesel	1.00	24.0	3,375	201	0.73
Emergency Generator	Diesel	1.00	24.0	4,551	101	0.73
Emergency Generator	Diesel	1.00	24.0	1,393	402	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

8. User Changes to Default Data

Screen	Justification
Land Use	Set all to one as not using any values based on size metric
Operations: Fleet Mix	Adjusted based on vehicle mix of LDA, LDT1,2 and HHDT as reported in traffic study
Operations: Road Dust	assumed about 25% of roads unpaved.
Operations: Consumer Products	adjusted pesticides to zero as down outside of program. zero out parking degreaser as not relevant.
Operations: Architectural Coatings	no coatings for operations
Operations: Landscape Equipment	site specific information provided.
Operations: Off-Road Equipment	site specific information based on 2023 equipment use. Since no LPG values entered as diesel. Increased days by factor of 1.29 based on scaling up the SMP2 activities to the SMP3 increase in areas and projected for a 10 year basis.
Operations: Emergency Generators and Fire Pumps	increased by factor of 1.29 from existing.

Existing SMP Energy Calculations

Annual Project Fuel Consumption-Existing	**Gasoline**	**Diesel**
On-Road Vehicles		15,098
Off-Road Equipment and Stationary Sources	5,996	762,157
Total for Annual Operation	**20,611**	**777,255**

Annual Fuel Consumption form Vehicles-Existing

		12	15	18	10	31	35
		LDA	LDT1	LDT2	HHDT		
	Fleet Mix	0.410447761	0.205223881	0.205223881	0.179104478		
Gasoline	Gasoline VMT	22,031,466	1,625,960	10,561,285	134		
Diesel	Diesel VMT	42,434	257	39,200	1,016,012		
Gasoline	Gasoline Fuel Consumption	698.91	61.85	411.82	0.03		
Diesel	Diesel Fuel Consumption	0.95	0.01	1.14	168.45		
Gasoline	Gasoline Fuel Economy	31.52	26.29	25.65	4.21		
Diesel	Diesel Fuel Economy	44.72	24.53	34.42	6.03		
Gasoline	Gasoline %	99.81%	99.98%	99.63%	0.01%		
Diesel	Diesel %	0.19%	0.02%	0.37%	99.99%		
Gasoline	Gasoline Annual Project Miles	208,025	104,196	103,827	12		
Diesel	Diesel Annual Project Miles	401	16	385	90,937	**Total**	
Gasoline	Project Gasoline Consumption	6,599	3,964	4,049	3	14,614	
Diesel	Project Diesel Consumption	9	1	11	15,077	15,098	

Notes:

1. The fleet mix was the default for the area from CalEEMod.
2. The VMT is the total VMT in miles from EMFAC and the Fuel Consumption is the total Fuel Consumption from EMFAC in 1000 gallons.
3. Fuel Economy is the Total VMT divided Fuel Consumption and 100 unit conversion and is miles per gallon.
4. The total Project VMT per year as estimated in CalEEMod is: 507,800 miles.

Annual Fuel Consumption for Equipment -Existing

Offroad Equipment Type	Amount	Days in Phase	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate lb/hp-hr	Diesel Fuel Consumption (gallons)	Gasoline Fuel Consumption (gallons)
Other Construction Equipment	1	1	382.5	500	0.42	0.367	4,147	
Other Construction Equipment	1	1	345	500	0.42	0.367	3,740	
Off-Highway Trucks	1	1	472.5	450	0.38	0.367	4,171	
Other General Industrial Equipment	1	1	684	74	0.34	0.408	988	
Off-Highway Trucks	1	1	337.5	425	0.38	0.367	2,814	
Off-Highway Trucks	1	1	555	510	0.38	0.367	5,553	
Off-Highway Trucks	2	1	1882.5	450	0.38	0.367	33,237	
Excavators	1	1	492	110	0.38	0.367	1,062	
Excavators	1	1	468	204	0.38	0.367	1,873	
Skid Steer Loaders	1	1	174	74	0.38	0.408	281	
Off-Highway Trucks	1	1	307.5	310	0.38	0.367	1,870	
Skid Steer Loaders	1	1	102	74	0.37	0.408	160	
Off-Highway Tractors	1	1	555	600	0.44	0.367	7,564	
Skid Steer Loaders	1	1	54	74.3	0.37	0.408	85	
Excavators	1	1	6	48.4	0.38	0.408	6	
Excavators	1	1	90	74.3	0.38	0.408	146	
Excavators	1	1	24	279	0.38	0.367	131	
Excavators	1	1	66	110	0.38	0.367	142	
Forklifts	1	1	6	82	0.2	0.408	6	
Off-Highway Trucks	1	1	97.5	600	0.38	0.367	1,148	
Rubber Tired Loaders	1	1	348	110	0.36	0.367	711	
Crawler Tractors	1	1	54	170	0.43	0.367	204	
Excavators	1	1	54	242	0.38	0.367	256	
Sweepers/Scrubbers	1	1	726	36	0.46	0.408	690	
Graders	1	1	12	250	0.41	0.367	63	
Off-Highway Trucks	2	1	2107.5	375	0.38	0.367	31,008	
Off-Highway Trucks	8	1	7140	510	0.38	0.367	571,486	
Off-Highway Trucks	1	1	180	600	0.38	0.367	2,119	
Off-Highway Trucks	1	1	90	375	0.38	0.367	662	
Excavators	1	1	360	242	0.38	0.367	1,709	
Excavators	1	1	204	275	0.38	0.367	1,101	
Rollers	1	1	78	44	0.38	0.408	75	
Rollers	1	1	30	46	0.38	0.408	30	
Rollers	1	1	30	75	0.38	0.408	49	
Rollers	1	1	12	134	0.38	0.367	32	
Rollers	1	1	6	128	0.38	0.367	15	
Aerial Lifts	1	1	12	25	0.31	0.408	5	
Tractors/Loaders/Backhoes	1	1	78	160	0.37	0.367	238	
Tractors/Loaders/Backhoes	1	1	84	163	0.37	0.367	262	
Off-Highway Trucks	1	1	225	360	0.38	0.367	1,589	
Emergency Generator	1	1	1056	536.2	0.73	0.367	21,339	
Emergency Generator	1	1	696	375.3	0.73	0.367	9,844	
Emergency Generator	1	1	2616	201	0.73	0.367	19,816	
Emergency Generator	1	1	3528	100.5	0.73	0.367	13,362	
Emergency Generator	1	1	1080	402.1	0.73	0.367	16,366	
Riding Mowers	1	1	150	25	0.38	0.408		82
Riding Mowers	1	1	720	155	0.38	0.367		2,189
Other Lawn & garden Equipment	1	1	60	74	0.58	0.408		148
Chainsaws	4	1	2190	1.86	0.7	0.408		655
Leaf Blowers/Vacuums	4	1	2190	4.5	0.94	0.408		2,127
Trimmers/Edgers/Brush Cutters	4	1	2190	1.74	0.91	0.408		796
Total Fuel Use from Equipment							762,157	5,996

1. Equipment list is from CalEEMod.
2. Fuel Consumption is 0.408 for less than 100 hp and .367 if greater than or equal to 100 hp based on CARB Off-Road Diesel Engine Emission Factors
3. To convert to gallons the conversion factor of 7.1089 lb/gallon is used
4. Fuel consumption is amount multiplied by usage hours, days in phase, horsepower, loadfactor, and fuel consumption rate divided by conversion factor.

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County

Region: Santa Clara

Calendar Year: 2026
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons

Region	Calendar Y	Vehicle Category	Model Yea	Speed	Fuel	Population	VMT
Santa Clar	2026	HHDT	Aggregate	Aggregate	Gasoline	1.890208	133.7551
Santa Clar	2026	HHDT	Aggregate	Aggregate	Diesel	8867.795	1016012
Santa Clar	2026	HHDT	Aggregate	Aggregate	Electricity	110.5302	11535.57
Santa Clar	2026	HHDT	Aggregate	Aggregate	Natural Ga	863.4608	56635.39
Santa Clar	2026	LDA	Aggregate	Aggregate	Gasoline	598869.8	22031466
Santa Clar	2026	LDA	Aggregate	Aggregate	Diesel	1478.944	42434.32
Santa Clar	2026	LDA	Aggregate	Aggregate	Electricity	64495.24	2739705
Santa Clar	2026	LDA	Aggregate	Aggregate	Plug-in Hy	20380.43	866414.1
Santa Clar	2026	LDT1	Aggregate	Aggregate	Gasoline	50750.47	1625960
Santa Clar	2026	LDT1	Aggregate	Aggregate	Diesel	18.47771	256.5587
Santa Clar	2026	LDT1	Aggregate	Aggregate	Electricity	263.5822	10628.88
Santa Clar	2026	LDT1	Aggregate	Aggregate	Plug-in Hy	130.6819	5898.082
Santa Clar	2026	LDT2	Aggregate	Aggregate	Gasoline	296178.9	10561285
Santa Clar	2026	LDT2	Aggregate	Aggregate	Diesel	1079.589	39200.14
Santa Clar	2026	LDT2	Aggregate	Aggregate	Electricity	2705.079	90693.22
Santa Clar	2026	LDT2	Aggregate	Aggregate	Plug-in Hy	2986.353	127896.3

/day for Emissions, 1000 gallons/day for Fuel Consumption

Trips	Fuel Cons	Energy Consumption
37.81927	0.031786	0
130549	168.4523	0
1443.078	0	21268.51
7769.707	10.99959	0
2780456	698.905	0
6277.405	0.948972	0
312996.4	0	1057752
84273.1	14.00214	137096.6
225981.5	61.85304	0
50.46	0.010459	0
1254.204	0	4103.625
540.3696	0.085873	1021.474
1383934	411.8229	0
5104.36	1.138772	0
13682.37	0	35015.07
12348.57	1.964782	21319.68

Program Renewal Energy Calculations

Annual Project Fuel Consumption	**Gasoline**	**Diesel**
On-Road Vehicles	14,614	15,098
Off-Road Equipment and Stationary Sources	6,144	983,182
Total for Annual Operation	**20,758**	**998,280**

Annual Fuel Consumption form Vehicles

		12	15	18	10	31	35
		LDA	LDT1	LDT2	HHDT		
	Fleet Mix	0.410447761	0.205223881	0.205223881	0.179104478		
Gasoline	Gasoline VMT	22,031,466	1,625,960	10,561,285	134		
Diesel	Diesel VMT	42,434	257	39,200	1,016,012		
Gasoline	Gasoline Fuel Consumption	698.91	61.85	411.82	0.03		
Diesel	Diesel Fuel Consumption	0.95	0.01	1.14	168.45		
Gasoline	Gasoline Fuel Economy	31.52	26.29	25.65	4.21		
Diesel	Diesel Fuel Economy	44.72	24.53	34.42	6.03		
Gasoline	Gasoline %	99.81%	99.98%	99.63%	0.01%		
Diesel	Diesel %	0.19%	0.02%	0.37%	99.99%		
Gasoline	Gasoline Annual Project Miles	208,025	104,196	103,827	12		
Diesel	Diesel Annual Project Miles	401	16	385	90,937	**Total**	
Gasoline	Project Gasoline Consumption	6,599	3,964	4,049	3	14,614	
Diesel	Project Diesel Consumption	9	1	11	15,077	15,098	

Notes:

1. The fleet mix was the default for the area from CalEEMod.
2. The VMT is the total VMT in miles from EMFAC and the Fuel Consumption is the total Fuel Consumption from EMFAC in 1000 gallons.
3. Fuel Economy is the Total VMT divided Fuel Consumption and 100 unit conversion and is miles per gallon.
4. The total Project VMT per year as estimated in CalEEMod is: 507,800 miles.

Annual Fuel Consumption for Equipment

Offroad Equipment Type	Amount	Days in Phase	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate lb/hp-hr	Diesel Fuel Consumption (gallons)	Gasoline Fuel Consumption (gallons)
Other Construction Equipment	1	1	493.425	500	0.42	0.367	5,349	
Other Construction Equipment	1	1	445.05	500	0.42	0.367	4,825	
Off-Highway Trucks	1	1	609.525	450	0.38	0.367	5,381	
Other General Industrial Equipment	1	1	882.36	74	0.34	0.408	1,274	
Off-Highway Trucks	1	1	435.375	425	0.38	0.367	3,630	
Off-Highway Trucks	1	1	715.95	510	0.38	0.367	7,163	
Off-Highway Trucks	2	1	2428.425	450	0.38	0.367	42,876	
Excavators	1	1	634.68	110	0.38	0.367	1,370	
Excavators	1	1	603.72	204	0.38	0.367	2,416	
Skid Steer Loaders	1	1	224.46	74	0.38	0.408	362	
Off-Highway Trucks	1	1	396.675	310	0.38	0.367	2,412	
Skid Steer Loaders	1	1	131.58	74	0.37	0.408	207	
Off-Highway Tractors	1	1	715.95	600	0.44	0.367	9,758	
Skid Steer Loaders	1	1	69.66	74.3	0.37	0.408	110	
Excavators	1	1	7.74	48.4	0.38	0.408	8	
Excavators	1	1	116.1	74.3	0.38	0.408	188	
Excavators	1	1	30.96	279	0.38	0.367	169	
Excavators	1	1	85.14	110	0.38	0.367	184	
Forklifts	1	1	7.74	82	0.2	0.408	7	
Off-Highway Trucks	1	1	125.775	600	0.38	0.367	1,480	
Rubber Tired Loaders	1	1	448.92	110	0.36	0.367	918	
Crawler Tractors	1	1	69.66	170	0.43	0.367	263	
Excavators	1	1	69.66	242	0.38	0.367	331	
Sweepers/Scrubbers	1	1	936.54	36	0.46	0.408	890	
Graders	1	1	15.48	250	0.41	0.367	82	
Off-Highway Trucks	2	1	2718.675	375	0.38	0.367	40,001	
Off-Highway Trucks	8	1	9210.6	510	0.38	0.367	737,217	
Off-Highway Trucks	1	1	232.2	600	0.38	0.367	2,733	
Off-Highway Trucks	1	1	116.1	375	0.38	0.367	854	
Excavators	1	1	464.4	242	0.38	0.367	2,205	
Excavators	1	1	263.16	275	0.38	0.367	1,420	
Rollers	1	1	100.62	44	0.38	0.408	97	
Rollers	1	1	38.7	46	0.38	0.408	39	
Rollers	1	1	38.7	75	0.38	0.408	63	
Rollers	1	1	15.48	134	0.38	0.367	41	
Rollers	1	1	7.74	128	0.38	0.367	19	
Aerial Lifts	1	1	15.48	25	0.31	0.408	7	
Tractors/Loaders/Backhoes	1	1	100.62	160	0.37	0.367	308	
Tractors/Loaders/Backhoes	1	1	108.36	163	0.37	0.367	337	
Off-Highway Trucks	1	1	290.25	360	0.38	0.367	2,050	
Emergency Generator	1	1	1362.24	536.2	0.73	0.367	27,528	
Emergency Generator	1	1	897.84	375.3	0.73	0.367	12,699	
Emergency Generator	1	1	3374.64	201	0.73	0.367	25,563	
Emergency Generator	1	1	4551.12	100.5	0.73	0.367	17,237	
Emergency Generator	1	1	1393.2	402.1	0.73	0.367	21,112	
Riding Mowers	1	1	150	25	0.38	0.408		82
Riding Mowers	1	1	720	155	0.38	0.367		2,189
Other Lawn & garden Equipment	1	1	120	74	0.58	0.408		296
Chainsaws	4	1	2190	1.86	0.7	0.408		655
Leaf Blowers/Vacuums	4	1	2190	4.5	0.94	0.408		2,127
Trimmers/Edgers/Brush Cutters	4	1	2190	1.74	0.91	0.408		796
Total Fuel Use from Equipment							983,182	6,144

1. Equipment list is from CalEEMod.
2. Fuel Consumption is 0.408 for less than 100 hp and .367 if greater than or equal to 100 hp based on CARB Off-Road Diesel Engine Emission Factors
3. To convert to gallons the conversion factor of 7.1089 lb/gallon is used
4. Fuel consumption is amount multiplied by usage hours, days in phase, horsepower, loadfactor, and fuel consumption rate divided by conversion factor.

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County

Region: Santa Clara

Calendar Year: 2026
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons

Region	Calendar Y	Vehicle Category	Model Yea	Speed	Fuel	Population	VMT
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Santa Clar	2026	HHDT	Aggregate	Aggregate	Diesel	8867.795	1016012
Santa Clar	2026	HHDT	Aggregate	Aggregate	Electricity	110.5302	11535.57
Santa Clar	2026	HHDT	Aggregate	Aggregate	Natural Ga	863.4608	56635.39
Santa Clar	2026	LDA	Aggregate	Aggregate	Gasoline	598869.8	22031466
Santa Clar	2026	LDA	Aggregate	Aggregate	Diesel	1478.944	42434.32
Santa Clar	2026	LDA	Aggregate	Aggregate	Electricity	64495.24	2739705
Santa Clar	2026	LDA	Aggregate	Aggregate	Plug-in Hy	20380.43	866414.1
Santa Clar	2026	LDT1	Aggregate	Aggregate	Gasoline	50750.47	1625960
Santa Clar	2026	LDT1	Aggregate	Aggregate	Diesel	18.47771	256.5587
Santa Clar	2026	LDT1	Aggregate	Aggregate	Electricity	263.5822	10628.88
Santa Clar	2026	LDT1	Aggregate	Aggregate	Plug-in Hy	130.6819	5898.082
Santa Clar	2026	LDT2	Aggregate	Aggregate	Gasoline	296178.9	10561285
Santa Clar	2026	LDT2	Aggregate	Aggregate	Diesel	1079.589	39200.14
Santa Clar	2026	LDT2	Aggregate	Aggregate	Electricity	2705.079	90693.22
Santa Clar	2026	LDT2	Aggregate	Aggregate	Plug-in Hy	2986.353	127896.3

/day for Emissions, 1000 gallons/day for Fuel Consumption

Trips	Fuel Cons	Energy Consumption
37.81927	0.031786	0
130549	168.4523	0
1443.078	0	21268.51
7769.707	10.99959	0
2780456	698.905	0
6277.405	0.948972	0
312996.4	0	1057752
84273.1	14.00214	137096.6
225981.5	61.85304	0
50.46	0.010459	0
1254.204	0	4103.625
540.3696	0.085873	1021.474
1383934	411.8229	0
5104.36	1.138772	0
13682.37	0	35015.07
12348.57	1.964782	21319.68

Appendix E

Special-Status Plant Species Considered but Rejected

Appendix E. Special-Status Plants Considered but Rejected

Scientific Name	Common Name	No Suitable Habitat	Outside of the Species' Known Geographic or Elevation Range	Believed to be Extirpated from the Program Renewal Area	Lack of Necessary Microhabitat or Edaphic Characteristics	Widely Distributed CNPS List 3 and 4 Species
Acanthomintha lanceolata	Santa Clara thorn-mint	X				X
Allium howellii var. *howellii*	Howell's onion				X	X
Allium sharsmithiae	Sharsmith's onion	X	X		X	
Androsace elongate ssp. *acuta*	California androsace			X		X
Arabis blepharophylla	Coast rockcress					X
Arctostaphylos regismontana	Kings Mountain manzanita	X	X			
Aspidotis carlotta-halliae	Carlotta Hall's lace fern	X			X	X
Boechera rubicundula	Mt. Day rockcress	X	X			
Calandrinia breweri	Brewer's calandrinia	X				X
Calochortus umbellatus	Oakland star tulip	X			X	X
Calyptridium parryi var. *hesseae*	Santa Cruz Mountains pussypaws	X	X			
Calystegia collina ssp. *venusta*	South Coast Range morning-glory	X			X	X
Chlorogalum pomeridianum var. *minus*	Dwarf soaproot	X	X			
Chorizanthe douglasii	Douglas' spineflower			X		X
Chorizanthe robusta var. robusta	Robust spineflower	X				
Cirsium praeteriens	Lost thistle			X		
Clarkia breweri	Brewer's clarkia	X			X	X
Clarkia lewisii	Lewis' clarkia	X				X
Collinsia corymbosa	Round-headed collinsia	X				
Convolvulus simulans	Small-flowered morning-glory	X			X	X
Cryptantha rattanii	Rattan's cryptantha			X		X
Cypripedium fasciculatum	Clustered lady's-slipper	X			X	X
Eriastrum tracyi	Tracy's eriastrum		X			X
Eriogonum argillosum	Clay buckwheat	X				X
Eriogonum elegans	Elegant wild buckwheat					X
Eriogonum umbellatum var. *bahiiforme*	Bay buckwheat	X	X		X	X
Eriophorum gracile	Slender cottongrass	X	X			X
Eriophyllum jepsonii	Jepson's wooly sunflower	X			X	X
Erysimum franciscanum	San Francisco wallflower	X			X	X

Scientific Name	Common Name	No Suitable Habitat	Outside of the Species' Known Geographic or Elevation Range	Believed to be Extirpated from the Program Renewal Area	Lack of Necessary Microhabitat or Edaphic Characteristics	Widely Distributed CNPS List 3 and 4 Species
Erythranthe diffusa	Palomar monkeyflower	X	X			X
Eschscholzia hypecoides	San Benito poppy	X			X	X
Frittilaria agrestis	Stinkbells	X			X	X
Fritillaria falcata	Talus fritillary	X			X	
Galium andrewsii	Phlox-leaf serpentine bedstraw	X			X	X
Grindelia hirsutula var. *maritima*	San Francisco gumplant	X			X	X
Hosackia gracilis	Harlequin lotus	X				X
Iris longipetala	Coast iris	X				X
Juglans californica	Southern California black walnut					X
Lasthenia conjugens	Contra Costa goldfields	X				
Legenere limosa	Legenere	X				
Leptosiphon acicularis	Bristly leptosiphon	X				X
Leptosiphon ambiguus	Serpentine leptosiphon					X
Leptosiphon grandiflorus	Large-flowered leptosiphon	X				X
Leptosyne hamiltonii	Mt. Hamilton coreopsis	X	X			
Lessingia tenuis	Spring lessingia	X				X
Lomatium observatorium	Mt. Hamilton lomatium	X	X			
Lomatium parvifolium	Small-leaved lomatium				X	X
Meconella oregana	Oregon meconella	X				
Mielichhoferia elongata	Elongate copper moss			X		X
Penstemon rattanii var. *kleei*	Santa Cruz Mountains beardtongue	X	X			
Pentachaeta exilis ssp. *aeolica*	San Benito pentachaeta		X			
Perideridia gairdneri	Gairdner's yampah				X	X
Phacelia phacelioides	Mt. Diablo phacelia	X	X			
Piperia candida	White-flowered rein orchid	X				X
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	X				
Plagiobothrys chorisianus var. hickmanii	Hickman's popcornflower	X				X
Plagiobothrys glaber	Hairless popcornflower	X				
Plagiobothrys verrucosus	Warty popcornflower	X	X			
Puccinellia simplex	California alkali grass				X	
Ranunculus lobbii	Lobb's aquatic buttercup	X				X
Ravenella exigua	Chaparral harebell	X			X	
Ravenella sharsmithiae	Sharsmith's harebell	X	X		X	
Sagittaria sanfordii	Sanford's arrowhead		X			

Scientific Name	Common Name	No Suitable Habitat	Outside of the Species' Known Geographic or Elevation Range	Believed to be Extirpated from the Program Renewal Area	Lack of Necessary Microhabitat or Edaphic Characteristics	Widely Distributed CNPS List 3 and 4 Species
Sanicula saxatilis	Rock sanicle		X			
Senecio aphanactis	Chaparral ragwort	X				
Sidalcea malachroides	Maple-leaved checkerbloom			X		X
Streptanthus callistus	Mt. Hamilton jewelflower	X	X			
Stuckenia filiformis ssp. *alpina*	Northern slender pondweed		X			
Trifolium buckwestiorum	Santa Cruz clover	X				

Appendix F

Mitigation Feasibility Assessment Field Protocol

Appendix F. Mitigation Feasibility Assessment Field Protocol

3.4.1 Introduction

Revegetation and riparian planting is one of five methods of mitigation. Experienced staff with recognized botanical and/or horticultural expertise should be consulted early in the project planning phase. Incorporating revegetation and riparian planting direction early into the planning phase will enable staff to identify critical elements or pre-existing conditions at each site. Assessing the project site for revegetation and planting mitigation feasibility will provide direction in determining:

a) Bank stabilization design;

b) Root zone protection measures: construction fencing, plywood/mulch, best access route;

c) Composition of a plant palette suitable to the site if planting is possible;

d) Feasibility of on-site mitigation by standard revegetation methods, and;

e) Selection of an alternate mitigation strategy (off-site, invasive species control, revegetation by seeding and/or weed control).

3.4.2 Attributes

The feasibility of mitigation depends on the opportunities and constraints of each bank repair site. These elements should be identified as part of the planning process, prior to bank repair design and regulatory agency review. The success criteria for mitigation should be evaluated and adjusted based on these findings. Each site will be analyzed with the criteria elements described below:

a) Hydrology – the proximity of the mitigation site to high-water events and the availability of water to mitigation plantings will directly impact the success of the mitigation site.

b) Velocity – location of plantings in relation to hydraulic characteristics. As an example, the inside of an oxbow or curve may receive velocities that cannot sustain vegetation.

c) Soils – soil type, nutrient content, friability, historic land use, and degree of compaction.

d) Type of repair – may directly relate to the site's ability to grow and support native plants. The type of bank repair may also limit the space available for mitigation, thereby requiring an off-site mitigation alternative.

e) Aspect – duration of sun/shade on site and influence of existing tree canopy. This will influence mitigation species palette.

f) Slope – directly relates to accessibility of site by staff, irrigation needs, and associated maintenance costs.

g) Adjacent land use – run-off from adjacent properties, proximity to trails, impacts from trash/vandalism, and fire hazards.

h) Access to site – tree removals/pruning/root zone protection, impacts to understory vegetation, and accessibility of site by staff to maintain mitigation site.

i) Presence of invasive plants or animals that are destructive to developing habitat – the long-term success of each site may be adversely impacted by the encroachment of invasive plants and animals into the site. The presence of native herbivores may also require additional protective measures to be incorporated into the mitigation strategy.

j) Presence of rare/listed species – may limit the maintenance activities allowed at the site.

k) Maintenance needs – should be incorporated into the revegetation design for each site. Assess future maintenance needs and determine access requirements, capacity needs, frequency site will need to be re-visited, etc.

3.4.3 Mitigation Feasibility Assessment (MFA) Ranking

The Mitigation Feasibility Assessment (MFA) will result in a revegetation potential divided into three separate rankings: high, medium, and low. Each of these rankings is based on the presence or absence of specific attributes (opportunities and constraints) assessed for the site. These attributes can be further grouped into:

- Physical constraints: required engineering, soil compaction, elevation and distance from the stream, shade/sun availability, etc.;

- Horticultural constraints: soil characteristics, availability of water; shading;

- Cultural/biological constraints: public access/vandalism, rodent activity, wildlife browse, invasive plant species; and

- Maintenance constraints: routine maintenance activities of the creek and flood protection infrastructure – such as access.

All attributes may not be applicable to every project site. Only those applicable attributes will be assessed to determine an appropriate MFA ranking.

MFA RANKING

a) **High** revegetation potential sites have few constraints and no insurmountable constraints with reasonable inputs.

b) **Medium** revegetation potential sites have a few constraints but no insurmountable constraints with reasonable inputs.

c) **Low** revegetation potential sites have several constraints that cannot be overcome with reasonable inputs.

Table F1 outlines specific guidance for ranking the revegetation potential of mitigation sites based on these criteria.

Table F1. Guidance for Ranking the Revegetation Potential for Mitigation Sites

Ranking	High	Medium	Low
Site Attribute			
Soils	Soil texture and chemistry suitable to horticultural processes with little or no intervention. (0)	Soil texture and chemistry require some intervention but will support establishment and long term plant processes. (5)	Soil texture or chemistry have significant obstacles to horticultural processes. Competing goals (levee compaction for instance) preclude modification. (10)
Slope	Slope stable and grade suitable for planting and worker safety during plant establishment. (0)	Slope creates difficulty in plant installation and maintenance (1.5: or greater). Planting and maintenance requires special infrastructure. (5)	Severe and/or unstable slope that limits or precludes planting. Worker safety (slope requires roping in, unstable slope above planting, etc.) constraints. (8)
Hydrology	Water on or immediately adjacent to site, soil allows good capillary action, return flows allow frequent inundation. No need to modify to create good hydrology. (0)	Site and soils have some limitations regarding water availability. Substrate suitable to root expansion. Site may be modified to facilitate water connectivity. (5)	Little to no water holding capacity. Site goes dry during hottest part of the year. Little or no ability to improve hydrology through site manipulation. (10)
Stream Velocity	Low velocity flows that will not impact plant establishment or mature plantings. (0)	Infrequent velocities sufficient to undermine or wash out vegetation. (5)	Frequent or constant velocities likely to undermine or wash out vegetation. (8)
Solar Aspect/Shade	Open area without harsh sun exposure. (0)	Harsh solar aspect or heavy shade that could impact plant establishment. Reasonable inputs can offset limitations. (5)	Heavy shade or solar aspect, coupled with other factors, create significant probability of plant failure. No reasonable remedies to overcome site condition. (10)
Repair Characteristics	Repair has planting attributes designed into the project. Design requirements are not incompatible with plant establishment. (0)	Repair has some features that are incompatible with plant establishment. Reasonable inputs or design modifications increase survival potential. (5)	Design requirements are incompatible with planting. Little or no accommodation can be made to increase plantability. (10)

Table F1. Guidance for Ranking the Revegetation Potential for Mitigation Sites

Ranking	High	Medium	Low
Adjacent Land Use	No land use issues incompatible with mitigation goals. (0)	Some level of land use or human activity incompatible with habitat goals (trespass, homeless habitation, dumping, illegal recreational uses, etc). Level may be reduced or eliminated with minimal intervention. (5)	Excessive or chronic human activity that is incompatible with habitat goals. Heavy homeless habitation, historic dumping, or other evidence of persistent unauthorized activity. Ability to change conditions unlikely or impossible. (10)
Access to Site	Little or no access restrictions for staff and equipment. (0)	Some access requirements that preclude vehicular access and or make pedestrian access difficult. Site may be accessed for establishment maintenance with reasonable accommodations. (5)	Significant obstacles to access by vehicles and pedestrians. Site may be landlocked (no easement), require extensive hiking or water crossings. Topography may preclude equipment access. (10)
Invasive Species/Rodents, Browse	Little or no evidence of invasive plant species or heavy rodent activity. (0)	Invasive plants on and/or encroaching into site. Current or recent evidence of heavy rodent populations (Pocket Gopher, CA Ground Squirrel. Issues and to be resolved or reduced to acceptable threshold at time of construction. (5)	Heavy infestation of invasive plant species (Arundo, Cape Ivy, Broom, Blue Gum Eucalyptus, etc.). Established active rodent population on and adjacent to site. Surrounding conditions suggest ongoing difficulty in controlling negative impacts (re-infestation from adjacent areas). (10)
ESA Limitations (Endangered Species Act)	No management limitations based on presence of listed species. Potential benefit to listed species due to creation of habitat. (0)	Presence of listed species requires alteration some of maintenance practices. Examples would be some pesticide prohibitions, delays in scheduled maintenance, limitations on vehicular access. (5)	Presence of listed species requires significant alteration of maintenance practices. Examples would be on-site biological monitor, complete pesticide ban, major calendar exclusions of maintenance activities. (8)

Table F1. Guidance for Ranking the Revegetation Potential for Mitigation Sites			
Ranking	High	Medium	Low
Facility Maintenance	Little or no change in site management based on required facility maintenance. (0)	Some change to mitigation required due to required facility needs. Examples such as reduced planting due to ongoing prescribed maintenance, setback of vegetation to meet fire codes, elimination of tree species to maintain capacity. (5)	Significant compromises in habitat design to accommodate facility needs. Examples would be Corps inspection setbacks, elimination of woody species to reduce roughness, loss of planting area for equipment access. (8)

3.4.4 Revegetation Potential Scoring

a) The "Highest" revegetation potential rating results in a "zero" score. The lower the score, the feasibility for replanting is higher; the site is better suited to revegetation efforts.

b) Each "Medium" or "Low" rating of an attribute would be scored as outlined in the above table. The individual points attached to each attribute are based on its potential to impede mitigation success and the degree of difficulty involved in overcoming the obstacle.

c) The total points would be deducted from the maximum success criteria (75% total survival of native vegetation in 5 years), and would result in an adjusted success criteria commitment; more appropriate to the specific site conditions.

d) If a site scores more than 40 using the prescribed formula, it would be considered unsuitable for revegetation and an alternative site or mitigation obligation would be proposed.

e) Some sites might have an extraordinary condition where one specific attribute could be scored higher than is listed in the table, whereby its function at that site is critical for the success of the site. (Sites with heavily compacted soils or areas within difficult hydrological conditions.) In that case, even if the overall scoring would seem possible, if one (a few) attribute(s) makes a site undesirable to plant, an alternative success criteria could be negotiated separate from the scoring formula proposed in the table. These exceptional conditions would be presented to the regulatory agencies on a case specific basis.

3.4.5 Mitigation Accounting

a) The maximum success criteria is 75 percent survival of native vegetation in 5 years. The lowest acceptable success criteria is 35 percent survival of native vegetation in 5 years. A 35 percent success criteria would be the result of a site receiving a "Revegetation Planting Potential" scoring of 40.

b) A site receiving a "perfect score" defined as a "High" in every category would commit to a maximum of 75 percent survival of native vegetation in 5 years from the time of installation.

c) The sum of all attribute scores are subtracted from the maximum success criteria percentage.

   Example: A site receives a total score of 20. The maximum success criterion is 75 percent. Therefore, 75-20 = 55 percent. This is the new success criteria of total native vegetation survival after 5 years.

d) The highest calculated score that a site could receive would be 40, resulting in a success criteria commitment of only 35 percent survival native vegetation after 5 years. If a site scores more than 40 using the prescribed Revegetation Planting Potential formula, it would be considered unsuitable for revegetation and an alternative site or mitigation obligation would be proposed.

Appendix G

Pesticide Regulatory Information

Introduction

Pesticides are one tool for pest control on Santa Clara Valley Water District (Valley Water) properties and facilities. The most common pesticide use is herbicide application to manage vegetation.

A variety of information sources are available to instruct Valley Water in its choice of pesticides, and Valley Water staff routinely review new and changed pesticide formulations and changed label limitations. New products are selected, and old products are discontinued because of the changing availability and suitability of the products for Valley Water use. As new technologies and chemistry become available, Valley Water evaluates its program and adopts materials that achieve optimum control while affording the best protection to environmental resources. To this end, Valley Water has developed a series of quality and environmental management system documents, including Q751D02, *Control and Oversight of Pesticide Use*, and WW75100, *Vegetation Control Work Instructions*, which define the process for evaluating pesticide use and making modifications to the pesticide program. All aquatic pesticides used by Valley Water will be applied by following the guidelines in the General National Pollutant Discharge Elimination System (NPDES) program permit. The General NPDES permit currently only authorizes discharges of certain pesticides (see "State Regulations" section below). As required by the General NPDES Permit, Valley Water carries out aquatic herbicide applications based on state-approved Aquatic Pesticide Application (APAP) as described in more detail under the "State Regulations" section below.

The process includes an annual meeting of Valley Water's Pesticide Review Team to: evaluate Valley Water's pesticide use; revise the list of pesticide products approved for use by Valley Water, as needed; respond to issues relative to the use of pesticides; recommend changes to the pesticide program, including training and procedures; review, evaluate, and approve the use of new products, including those to be used by contractors and permittees; and research alternatives to pesticides. Furthermore, all Valley Water staff members who use or supervise the use of pesticides in the course of their duties receive annual training that provides: a review of applicable laws and regulations, an update on new products, a review of proper procedures for use and handling, a review of pesticide impacts on the environment, and label/material safety data sheet training. Valley Water uses Category III and IV herbicides, which are the least toxic chemical herbicides designated by the U.S. Environmental Protection Agency (USEPA), except for triclopyr-choline and paraffinic oil, which are Category II. In addition, all pesticide applicators are required to be licensed by the California Department of Pesticide Regulation or work under the supervision of someone who is licensed in accordance with Valley Water's Pesticide Policy.

Valley Water uses a surfactant to enhance the performance of herbicides. Surfactants aid the ability of an herbicide to penetrate the surface of vegetation by increasing its ability to spread over vegetation, stick to foliage, and penetrate thick cuticles. The use of a surfactant to achieve reasonable levels of control is either required or highly recommended for most aquatic herbicides. In instances where surfactants are absent from the tank mix, the level of control often is reduced. A reduction in control causes a greater return frequency, which translates to more herbicide being used in the system and more frequent disturbance to the site.

Table G-1 lists the pesticides proposed for use for the Stream Maintenance Program Renewal (Program Renewal), with their intended use.

Table G-1. Pesticides Proposed for Use

Pesticide	Type	Use
Aminopyralid	Pre-emergent and post-emergent Herbicide	Post- and pre-emergent control of broadleaf weed on levee slopes firebreaks and maintenance roads—upland use.
Clopyralid	Post-emergent Herbicide	Post-emergent, selective to specific broadleaf families. Some minor pre-emergent activity. Used for control of yellow star-thistle on levee slopes/upland parcels.
Glyphosate	Post-emergent Herbicide	Post-emergent, nonselective. Approved for aquatic use. Used in channels. Roundup used in upland areas on maintenance roads/firebreaks. Cut-stump treatments for woody vegetation.
Imazapyr	Post-emergent Herbicide	Broad spectrum herbicide used for upland and aquatic applications (Invasive Spartina Program). Especially effective on monocots and superior to glyphosate because of quicker drying time, lower spray volumes, and use in estuarine environments. Used for control of emergent and floating aquatic vegetation.
Isoxaben	Pre-emergent Herbicide	Pre-emergent, selective to broadleaf weeds. Used on levee slopes and maintenance roads.
Triclopyr	Post-emergent Herbicide	Post-emergent, selective to broadleaf weeds. Used on levee slopes. Cut-stump treatments for woody vegetation.
Aminopyralid + triclopyr	Post-emergent Herbicide	Post-emergent, target specific vegetation or spot spray. Used on upper maintenance roads and inboard or outboard levee slopes.
Dithiopyr	Pre-emergent Herbicide	Pre-emergent, broadcast application to bare ground. Used on upper maintenance roads and inboard or outboard levee slopes.
Aminopyralid + Florpyrauxifen-benzyl	Post-emergent Herbicide	Post-emergent, target specific vegetation or spot spray. Used on upper maintenance roads and inboard or outboard levee slopes.
Ethyl oleate	Non-ionic surfactant	Non-ionic surfactant, may be used in conjunction with application of other active ingredients. Used in channel, on upper maintenance roads and inboard or outboard levee slopes.
Imazamox	Post-emergent Herbicide	Post-emergent, target specific vegetation or spot spray. Used in channel, lower maintenance roads, access ramps, and terrace areas.
Triclopyr-choline	Post-emergent Herbicide	Post-emergent, target specific vegetation or spot spray. Used in channel, lower maintenance roads, access ramps, and terrace areas.
Paraffinic oil	Non-ionic surfactant	Non-ionic surfactant, target specific vegetation or spot spray. Used in channel, lower maintenance roads, access ramps, and terrace areas.

Source: Data compiled by Montrose Environmental in 2024

In general, aquatic species (e.g., fish and amphibians) are more susceptible to adverse effects than terrestrial wildlife because of the potential for surfactants to alter cell permeability, thus increasing the potential for absorption of chemicals through their thin, moist skin. Some surfactants, particularly those that are nonylphenol-based, have been documented to result in chemical-induced lethargy and unconsciousness in fish, which can result in an increased risk of predation as well as cause estrogenic effects (Smith et al. 2004, USFS 2007). However, Valley Water proposes to limit surfactant use to the products that are oil-based and documented to have the least toxic effect to aquatic life. Oil-based surfactants function by increasing the absorption of herbicides through plant tissues. They are especially useful in increasing the penetration of herbicides through the bark of woody brush or tree stems (Bakke 2007). A study on the toxicity of surfactants to juvenile rainbow trout concluded that an oil-based surfactant, Agri-dex was less toxic to rainbow trout than two other commonly used surfactants, R-11 and LI 700 (Smith et al. 2004), and the *2006 Supplemental Environmental Assessment of NOAA Fisheries Implementation Plan for the Community Based Restoration Program* (NOAA 2006) concluded that Agri-dex was among the surfactants least toxic to marine and aquatic organisms.

Regulatory Setting

All pesticides used by Valley Water are subject to regulation by federal and state agencies. The applicable state and federal laws are discussed next.

Federal Regulations

Federal Insecticide, Fungicide and Rodenticide Act

Federal regulation takes place under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), amended by the Federal Environmental Pesticide Control Act, both which are implemented by the USEPA. These acts prohibit the use of a pesticide that is inconsistent with the label and requires that all pesticides be registered with USEPA.

The process of registering a pesticide is a procedure through which USEPA examines the ingredients of the pesticide in the context of the particular site or crop on which it is to be used; the amount, frequency, and timing of its use; and storage and disposal practices to determine whether a pesticide has the potential to cause adverse effects on humans, wildlife, fish, and plants, as well as the potential to contaminate surface water or ground water supplies. USEPA also must approve the language that appears on each pesticide label. A pesticide product only can be used legally, according to the directions on the labeling that accompany it at the time of sale (unless later modified by periodic label updates).

USEPA's core pesticide risk assessment and regulatory processes ensure that protection is in place for all populations of non-target species. Furthermore, because endangered species may need specific protection, USEPA has developed risk assessment procedures to determine whether individuals of a listed species have the potential to be harmed by a pesticide and, if so, what specific protection may be appropriate.

USEPA established the Endangered Species Protection Program (ESPP) in 1988, to carry out its responsibilities under FIFRA in compliance with the Endangered Species Act (ESA), while at the same time not placing an unnecessary burden on agriculture and other pesticide users. Under this program, USEPA developed county bulletins that contained recommended (i.e., voluntary) pesticide use limitations, based on consultations with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), also referred together hereafter as "Services."

USEPA published its final approach to field implementation of the ESPP on November 2, 2005, making it an enforceable program under FIFRA. Under the ESPP, USEPA conducts a thorough ecological risk assessment to determine the potential risks that a pesticide may pose to a listed species and any designated critical habitat for the species. This assessment results in an "effects determination."

An assessment to determine potential effects of a pesticide's registration to a listed species results in one of two determinations:

- The pesticide's registered use will have "no effect" on the species; or
- The pesticide's registered use "may affect" the species.

If USEPA determines the pesticide "may affect" the species, it refines its assessment to determine whether the pesticide's use:

- "May affect, but is not likely to adversely affect" the species; or
- "May affect and is likely to adversely affect" the species.

A determination that the pesticide "may affect, but is not likely to adversely affect," is made where the effects on the listed species are expected to be discountable, or insignificant, or completely beneficial; terms which the USFWS has discussed in guidance as including effects extremely unlikely to occur, which cannot be evaluated, would never reach a scale where take would occur, or are wholly beneficial.

If USEPA determines that a pesticide will have "no effect" on a listed species, no further action is required relative to the pesticide's registration, label, or use instructions.

If USEPA determines that a pesticide's use "may affect but is not likely to adversely affect" a listed species, the agency engages the Services in a process called informal consultation. The result of this process is typically a letter of concurrence or non-concurrence from the Services with USEPA's determination.

If the Services do not concur with USEPA's determination that a pesticide's registered use is "not likely to adversely affect" a species, or if USEPA determines that the pesticide "may affect and is likely to adversely affect" a listed species, it will engage the Services in a process called formal consultation.

During formal consultation, USEPA provides the Services with its detailed assessment of potential risks and its effects determination for a given pesticide. The Services review that

information and evaluate it in light of the status and needs of the listed species potentially affected. The Services then generally provide USEPA with a Biological Opinion, which contains the Services assessment and recommendations for steps that USEPA should take, if any, to reduce or eliminate potential risk to the species.

The Services' Biological Opinion provides the Services' view of whether the pesticide's registered use is likely to jeopardize the continued existence of the species and, if so, describes alternatives to avoid jeopardy. The Services also authorize any "take" (unintended injury or killing of individual listed animals) that would otherwise be prohibited, as long as measures to minimize take are implemented.

If, at the conclusion of this process, USEPA determines that a pesticide's registration, label, or use instructions should be altered to ensure that use of a pesticide would not take or jeopardize the continued existence of a listed species, USEPA may require changes to the use conditions specified on the label of the product. When such changes are necessary only in specific geographic areas rather than nationwide to ensure protection of the listed species, USEPA implements these changes through geographically specific Endangered Species Protection Bulletins via their "Bulletins Live! Two system." Although the original, voluntary county bulletins remain available on USEPA's Web site for use by pesticide applicators, they are not legally enforceable pesticide use limitations. However, the use limitations contained in these new bulletins are mandatory and legally enforceable.

In August 2024, the USEPA released its final Herbicide Strategy, which is an updated comprehensive plan aimed at safeguarding more than 900 federally listed endangered and threatened species from the potential effects of herbicides. This plan builds upon past EPA pesticide regulations and emphasizes early identification and implementation of mitigation measures to minimize herbicide exposure to these species before formal effects determinations are made under the ESA. Additionally, the strategy includes protective measures like buffer zones, spray drift controls, and runoff management to reduce the impact of herbicides on both species and their habitats. The goal of this approach is to streamline the process and reduce the chances of future "jeopardy" or "adverse modification" findings under the ESA by establishing protections earlier in the pesticide review process. The Herbicide Strategy follows a three-step framework to assess the need, scope, and extent of mitigation required when evaluating conventional agricultural herbicide actions under FIFRA:

1. Identify potential for population-level impacts

2. Identify type and level of mitigation

3. Identify where mitigation applies

In December 2024, the USEPA published an updated process for developing maps to protect species designated as threatened or endangered by the USFWS. This includes Pesticide Use Limitation Areas (PULAs) which are specific geographic areas where additional restrictions on pesticide use are applied to protect federally listed endangered and threatened species and their designated critical habitats. PULAs are enforceable

under the FIFRA and are based on "core maps" that identify important areas for a species, such as its range or critical habitat. “Core maps” are created based on listed species identified in the EPA’s September 2024 Vulnerable Species Action Plans (VSAP) which provides a framework for adopting early, meaningful protections to address potential impacts for species identified as particularly vulnerable to pesticides. PULAs focus on areas where pesticide impacts are likely to affect the survival or recovery of these species and are communicated through the EPA's “Bulletins Live! Two system.” If a pesticide label directs users to check for a PULA, they must follow the additional restrictions found in the “Bulletins Live! Two system.” Pesticide users are required to check for PULAs up to six months before pesticide application.

Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit

The USEPA also oversees pesticide discharges to U.S. Waters through the NPDES program under Section 402 of the Clean Water Act (CWA). The CWA regulates pesticide use to protect water quality and prevent pollution in or near water bodies (such as rivers, lakes, and streams). Under the NPDES program, permits are required for pollutant discharges, including pesticides, from point sources. This applies to pesticide applications that directly discharge into water bodies, such as spraying over water or runoff from treated areas.

State Regulations

California Department of Agriculture Pesticide Label Requirements

California, through its Department of Food and Agriculture, further restricts pesticide use by restrictions carried on the pesticide label. California also requires that a pesticide recommendation be prepared by a State-licensed pest control advisor (PCA). The PCA must evaluate the pest control needs and determine the appropriate pesticide to be used, if any, the rate and method of application and, in general, assure that the use is consistent with the label. Furthermore, the State sets training and licensing requirements for personnel applying or supervising application of pesticides.

Porter-Cologne Water Quality Control Act

Under the authority of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act (Porter-Cologne), the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are responsible for administering and enforcing water quality standards within the state, including those for pollutants like pesticides. These boards are specifically tasked with issuing NPDES permits for certain point-source and non-point-source discharges to California’s waters.

General NPDES Aquatic Pesticide Use Permit

The SWRCB adopted the Statewide General NPDES Permit for the Regulation of Residual Aquatic Pesticide Discharges to Waters of the U.S. from Algae and Aquatic Weed Control Applications (Water Quality Order 2013-002-DWQ, General Permit # CAG990005)

(General Permit). This General NPDES permit currently only authorizes the discharge of the following aquatic pesticides: 2,4 D, acrolein, copper, diquat, endothall, flumioxazin, fluridone, glyphosate, hydrogen peroxide, imazamox, imazapyr, penoxsulam, sodium carbonate peroxyhydrate, and triclopyr based algaecides and aquatic herbicides, and adjuvants containing ingredients represented by the surrogate nonylphenol. Aquatic pesticides that are applied to waters of the U.S. in accordance with FIFRA label requirements are not considered pollutants. However, pesticides or by products that persist in or leave the treatment area after a specified treatment period are considered pollutants and require coverage under this General Permit.

To obtain coverage under the General NPDES permit, a discharger must comply with all of the monitoring, reporting, and other restrictions detailed in the permit. First, an applicant must submit a Notice of Intent, a vicinity map, and an annual fee to the applicable RWQCB to apply for coverage under the permit. An applicant must comply with the specific monitoring requirements identified in the permit and must submit annual reports (at the least) to the applicable RWQCB. The General NPDES permit for weed control requires that dischargers comply with effluent limitations, including developing and implementing an Aquatic Pesticide Application (APAP), and complying with applicable receiving water limitations. A discharger covered by the permit must follow all pesticide label instructions and any terms contained in Use Permits issued by CACs. In addition, applicators of a pesticide designated as a restricted material must either be licensed by CDPR or must work under the supervision of a licensed professional.

Federal Court Injunctions

In addition to the federal and state regulations, pesticide use in the Program Renewal Area is subject to the following two federal court-ordered injunctions, based on information provided on USEPA's Web site (https://www.epa.gov/endangered-species/endangered-species-litigation-and-associated-pesticide-limitations). These injunctions would not apply to the Program Renewal if Valley Water obtains approval of take resulting from pesticide use from the USFWS and NMFS during Program Renewal-specific Section 7 consultation. None of the ingredients in pesticides proposed for use as part of the Program Renewal are subject to the August 15, 2014, injunction for salmonids, which includes restrictions related to protecting streams mapped as critical habitat for Central and South-Central California Coast steelhead. Thus, the restrictions described in this injunction do not apply to Valley Water herbicide use under the Program Renewal and are not discussed further.

Injunction 1: Center for Biological Diversity vs. USEPA (Case No. 02-1580-JSW [JL])

On October 20, 2006, the Federal District Court for the Northern District of California issued a Stipulated Injunction that resolved a case brought against USEPA by the Center for Biological Diversity. The court's injunction put in place buffer areas around certain habitats of the California red-legged frog (including habitat in the Program Renewal Area)

that disallows use of certain pesticides within those habitats and buffer zones, including the following pesticides that are proposed for use by Valley Water:

- Glyphosate
- Imazapyr
- Triclopyr

The injunction disallows pesticide use only within and around certain geographic areas designated by the USFWS as critical habitat, and specified non-critical habitat "sections," including areas within Santa Clara County (Figure G-1). For the purposes of this injunction, habitat types are defined as follows:

- **Aquatic breeding critical habitat.** Standing bodies of fresh water (salinity less than 7.0 parts per thousand) including: natural and human-made (e.g., stock) ponds, slow-moving streams or pools within streams, other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest years.
- **Non-breeding aquatic critical habitat.** Fresh water habitats that may or may not hold water long enough for the frog to complete its lifecycle but that provide for shelter, foraging, predator avoidance, and aquatic dispersal. Wetland habitats that meet these elements include, but are not limited to, plunge pools within intermittent creeks, seeps, quiet water refugia during high water flows, and springs of sufficient flow to withstand summer dry periods.
- **Upland critical habitat.** Upland areas within 200 feet of the edge of riparian vegetation or dripline surrounding aquatic and riparian habitat and comprised of vegetation such as grasslands, woodlands, and/or wetland/riparian plant species that provides shelter, forage, and predator avoidance for the frog. The habitat can include natural features, such as boulders, rocks, organic debris, small mammal burrow, and moist leaf litter or human-made features such as industrial debris and agricultural features.
- **Aquatic features.** Fresh-water habitats in or near lowlands or foothills with dense, shrubby, or emergent vegetation. Such areas include natural or human-made (e.g., stock) ponds, slow-moving streams or pools within streams, and other ephemeral or permanent waterbodies that typically become inundated during winter rains, such as plunge pools, intermittent creeks, seeps, and quiet water refugia. Such areas do not include those areas not otherwise meeting the definition of aquatic breeding habitat and non-breeding aquatic habitat.
- **Upland habitats.** All areas that are both within 200 feet of the mean high-water mark of an aquatic feature and meet the definition of upland habitat as it applies to critical habitat.

Program Renewal Area

Program Renewal Area Boundary

Projected Activities

California Red-Legged Frog Habitat Areas Subject to the 2006 Injunction

Restrictions apply to aminopyralid + triclopyr, glyphosate, imazapyr, oryzalin, pendimethalin, triclopyr, and triclopyr-choline

Critical Habitat

Additional Areas

Bay Checkerspot Butterfly Habitat Areas Subject to the 2010 Bay Area Listed Species Injunction

Restrictions apply to oryzalin

Critical Habitat

Additional Areas

California Tiger Salamander Habitat Areas Subject to the 2010 Bay Area Listed Species Injunction

Restrictions apply to pendimethalin

Critical Habitat

Additional Areas

N 5 2.5 0 5

Miles

Alameda

San Mateo

Santa Clara

Santa Cruz

San Mateo

Santa Cruz

Stanislaus

Santa Clara

San Benito

237 101 680 880 82 85 82 87 101 130 85 17 82 101 82 101 152 152 25

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H. T. HARVEY & ASSOCIATES

Ecological Consultants

Figure G-1: Program Renewal Areas Subject to Pesticide Injunctions

Santa Clara Valley Water District Stream Maintenance Program Renewal Environmental Impact Report

Standard buffers apply as follows:

- Within the general critical habitat areas shown on county maps—All areas described by the USFWS non-breeding aquatic critical habitat or upland critical habitat for the California red-legged frog, and in buffer zones (60 feet for ground application or 200 feet for aerial applications) measured from the edge of the aquatic breeding, non-breeding aquatic, or upland critical habitat; or
- Within non-critical habitat sections shown on county maps—All upland habitats and buffer zones (60 feet for ground application or 200 feet for aerial applications) measured from the edge of the aquatic feature or upland habitat.

However, some pesticide uses are exempt from the court's injunction or have exceptions associated with them, as described next.

Exceptions Resulting in Reduced Buffer Areas. If the proposed pesticide use is covered under one or more of the following, then a reduced buffer area is applicable:

- Use of 1,3-dichloropropene (telone) and chloropicrin
- Localized spot treatments using handheld devices on rights-of-way, roadsides, pastures, lawns, or in forests
- Spot treatments of wasp and hornet nests
- Individual tree removal using cut stump application
- Basal bark application to individual plants
- Tree injection applications
- Use of the pesticides in bait stations

Under these circumstances, the covered pesticides may not be used within 60 feet of aquatic breeding critical habitat or non-breeding aquatic critical habitat within the critical habitat areas (shown on county maps) or within 60 feet of aquatic features within the non-critical habitat sections subject to the injunction. Program Renewal activities that met any of these criteria would be subject to the reduced buffer width.

Exceptions for ESA-Approved Use. If the proposed pesticide use is permissible under one or more of the following, the injunction does not apply:

- A "no jeopardy" biological opinion issued under ESA Section 7(a)(2) by the USFWS and that biological opinion addresses the use of the pesticide and effects on the California red-legged frog, provided that such use is consistent with any incidental take statement included with the USFWS biological opinion.
- A “reasonable and prudent alternative” identified in a “jeopardy” biological opinion, issued under ESA Section 7(a)(2) by the USFWS that addresses the use of the pesticide and effect on the California red-legged frog, provided that such use is consistent with the “reasonable and prudent alternative” and any incidental take statement included with the Service’s biological opinion.

- A written concurrence by the USFWS in a "not likely to adversely affect" determination, made under ESA Section 7(a)(2) that addresses the use of the pesticide and effects on the California red-legged frog.
- An incidental take permit issued by the USFWS under ESA Section 10(a) that authorizes the take of the California red-legged frog from application or use of the pesticide.
- Completion of a "not likely to adversely affect" determination made by an action agency to satisfy its ESA Section 7(a)(2) consultation obligation for a particular use of a pesticide, pursuant to the applicable regulations in effect at the time that the determination is made.

Exceptions for Invasive Species and Noxious Weed Programs. The injunction generally applies to invasive species and noxious weed control. However, the injunction does not apply if all of the following conditions are met:

- One is applying a pesticide for purposes of controlling state-designated invasive species and noxious weeds under a program administered by a public entity; and
- One does not apply the pesticide within 15 feet of aquatic breeding critical habitat or non-breeding aquatic critical habitat within critical habitat areas, or within 15 feet of aquatic features within non-critical habitat sections subject to the injunction; and
- Application is limited to localized spot treatment using hand-held devices; and
- Precipitation is not occurring or forecast to occur within 24 hours; and
- One is a certified applicator or working under the direct supervision of a certified applicator; and
- If using 2,4-D or triclopyr, one uses only the amine formulations.

Injunction 2: Center for Biological Diversity vs. USEPA (Case No.07-2794-JCS [N.D. Cal]))

On May 30, 2007, the Center for Biological Diversity filed a lawsuit in the U.S. District Court for the Northern District of California, alleging that USEPA failed to comply with Section 7(a)(2) of the ESA in regard to 47 pesticides and 11 species that are listed as endangered or threatened under the ESA. Ultimately, 75 pesticides came to be at issue in this case.

On May 17, 2010, the federal government agreed to a Stipulated Injunction to resolve the lawsuit. The Stipulated Injunction sets forth a schedule by which USEPA will review the registrations of pesticides containing any of 75 pesticide active ingredients for their potential effects to one or more of 11 federally listed threatened or endangered species in eight counties around the San Francisco Bay area. The injunction also identifies interim pesticide use limitations intended to reduce exposure to the 11 species during the time USEPA is assessing these pesticides and consulting with the USFWS, as appropriate.

The species identified in the lawsuit and relevant to the Program Renewal are:

- Bay checkerspot butterfly
- California tiger salamander
- Delta smelt
- Salt marsh harvest mouse
- San Joaquin kit fox

The interim protective measures are no-use buffer zones adjacent to certain features within certain geographic areas in the eight counties. These buffer zones are different, depending on the species at issue and the pesticide being used. The specific buffer zones are available on the San Francisco Bay Area—Interim Pesticide Use Limitations interactive map (SFB interactive map (https://www.epa.gov/endangered-species/san-francisco-bay-area-map-tool-identify-interim-pesticide-use-limitations); however, Valley Water will not be applying herbicides that are associated with this injunction and therefore establishing buffers under the Stipulated Injunction would not be applicable to the Program Renewal.

Endangered Species Act Approved Uses. No buffers are imposed where use is permissible under one or more of the following:

- A "no jeopardy" biological opinion issued under the ESA Section 7(a)(2) by the USFWS that addresses the use of the pesticide and effects on any one or more of the 11 species subject to this Stipulated Injunction, provided that such use follows any "reasonable and prudent measures" established in connection with an incidental take statement included with the Service's biological opinion;
- A "reasonable and prudent alternative" identified in a "jeopardy" biological opinion issued under ESA Section (7)(a)(2) by the USFWS that addresses the use of the pesticide and its effects on any one or more of the 11 species subject to this Stipulated Injunction, provided that such use follows the "reasonable and prudent alternatives" and any "reasonable and prudent measures" in connection with the incidental take statement included with the Service's biological opinion;
- A written concurrence by the USFWS in a "not likely to adversely affect" determination made under ESA Section (7)(a)(2) that addresses the use of the pesticide and effects on any one or more of the 11 species subject to this Stipulated Injunction; or
- An incidental take permit issued by the USFWS under ESA Section 10(a) that authorizes the take of any of the 11 species subject to this Stipulated Injunction from application or use of the pesticide.

Program Renewal Applicability

Under the Program Renewal, pesticides would continue to be used in compliance with applicable state and federal law. Furthermore, because a new USEPA bulletin for Santa Clara County has not yet been prepared, Valley Water would continue to use pesticides in accordance with the voluntary guidelines established in the 2000 USEPA bulletin, *Protecting Endangered Species, Interim Measures for Use of Pesticides in Santa Clara County* (Bulletin). The use limitations applicable to a specific pesticide are based on:

- Class of the pesticide (e.g., herbicide or fumigants [gas cartridge or aluminum phosphate])
- Active ingredient of the pesticide
- Activity category, which broadly defines the mode of action and use patterns of the pesticide
- Listed species potentially occurring at the use site, which are classified into hazard classes based on characteristics such as life forms and habitat requirements

These four components determine the use limitations that should be implemented when using a particular pesticide to minimize adverse effects to listed species.

The use limitations in this bulletin apply only to pesticide use in those areas shown in Figure H-1. Furthermore, within these areas, the use limitations apply only to the use of

those pesticides for which the hazard class of the pesticide matches the hazard class of a species that may occur in the area, and where the pesticide will be used on a site consistent with the habitat of the species as noted in **Table G-2**.

The species hazard classes relevant to the Program Renewal Area are shown in **Table G-2**. Because the Bulletin is designed to minimize impacts to federally listed species, it does not include other special-status species. Nonetheless, characteristics of the other special-status species that may be adversely affected by the Program Renewal's pesticide use could be used to infer the appropriate hazard class, and thus use limitations, for those species.

Table G-2. Herbicide Hazard Classes and Applicable Species

Hazard Class	Federally Listed Species Addressed in the 2000 USEPA Bulletin for Santa Clara County	Other Special-Status Species in the Program Renewal Area that may be Similarly Affected
Aquatic Animals (AQ)	Chinook salmon Steelhead California clapper rail California least tern California red-legged frog	Foothill yellow-legged frog California tiger salamander
Dicot Plants (PD)	Santa Clara Valley dudleya Metcalf Canyon jewel-flower	Tiburon paintbrush Coyote ceanothus California seablite Alkali milk-vetch Point Reyes bird's beak Small spikerush Arcuate bush-mallow Woodland woollythreads Prostrate vernal pool navarretia Big-scale balsamroot Pink creamsacs Mt. Hamilton thistle San Francisco collinsia Loma Prieta hoita Woolly-headed lessingia Smooth lessingia Most beautiful jewel-flower Bent-flowered fiddleneck Anderson's manzanita Brittlescale Congdon's tarplant Santa Clara red ribbons Hospital Canyon larkspur Western leatherwood Hoover's button-celery Satan's goldenbush Hall's bush-mallow Robust monardella Saline clover
Monocot Plants (PM)		Franciscan onion Fragrant fritillary

Source: Data compiled by Montrose Environmental in 2024

Table G-3 lists those pesticides proposed for use under the Program Renewal that were covered in the 2000 USEPA bulletin for Santa Clara County, their species hazard class, and ULC. ULC codes are provided in **Table G-4**. Valley Water would implement these measures to avoid or minimize impacts from herbicides to non-target species.

Table G-3. Proposed Pesticides and Use Limitation Codes

Pesticide	Type	Species Hazard Class	USEPA ULC
Clopyralid	Post-emergent Herbicide	PD	11, 17
Glyphosate	Post-emergent Herbicide	PD; PM	11, 17
Imazapyr	Post-emergent Herbicide	PD; PM	11, 16, 17, 19
Isoxaben	Post-emergent Herbicide	PD; PM	11, 16, 17, 19
Triclopyr	Post-emergent Herbicide	AQ; PD	11, 17

Source: Data compiled by Montrose Environmental in 2024

Table G-4. Use Limitation Codes

Code	Limitation
11	Do not use in currently occupied habitat except: (1) as specified in Habitat Descriptors, (2) in organized habitat recovery programs, or (3) for selective control of invasive exotic plants.
16	Conduct irrigations efficiently to prevent excessive loss of irrigation waters through run-off. Schedule irrigations and pesticide applications to maximize the interval of time between the pesticide application and the first subsequent irrigation. Allow at least 24 hours between the application of pesticides listed in this bulletin and any irrigation that results in surface run-off into natural waters. Time applications to allow sprays to dry before rain or sprinkler irrigations. Do not make aerial applications while irrigation water is on the field unless surface run-off is contained for 72 hours following the application.
17	For sprayable or dust formulations: when the air is calm or moving away from habitat, commence applications on the side nearest the habitat and proceed away from the habitat. When air currents are moving toward habitat, do not make applications within 200 yards by air or 40 yards by ground upwind from occupied habitat. The county agricultural commissioner may reduce or waive buffer zones following a site inspection, if there is an adequate hedgerow, windbreak, riparian corridor or other physical barrier that substantially reduces the probability of drift.
19	Do not apply within 30 yards upslope of habitat unless a suitable method is used to contain or divert runoff waters.

Source: Data compiled by Montrose Environmental in 2024.

Furthermore, Valley Water will comply with the USEPA's Herbicide Strategy and PULAs, as outlined above, to ensure compliance with the latest federal regulations for pesticide use.

In addition to adhering to USEPA regulations, and the USEPA bulletin for Santa Clara County, the Program Renewal will continue to meet the requirements outlined in the NPDES permit, including water quality monitoring and pesticide toxicity control. Furthermore, all aquatic pesticides used by Valley Water under the General NPDES permit are applied in compliance with NPDES guidelines. As required by the General NPDES Permit, Valley Water carries out aquatic herbicide applications based on a state-approved APAP. In accordance with permit conditions and the APAP, Valley Water staff

record the types of herbicides used and their application locations. Annual monitoring reports are submitted to the SWRCB and RWQCB to document herbicide application events, assess the effectiveness of Best Management Practices (BMPs), and provide monitoring data.

Additional Valley Water Pesticide Use Guidelines

Valley Water has set forth additional guidelines for pesticide use that go beyond the laws and regulations established by the regulatory agencies mentioned above. These additional guidelines are discussed next.

Herbicides

The goal of Valley Water's Vegetation Management Program is to achieve the desired control while balancing environmental and economic considerations. Herbicides, although often the most effective means of managing vegetation economically, are routinely dismissed for some applications because of other factors, such as potential adverse effects on non-target species, which make their use in a given situation inappropriate. In the same context, herbicides used appropriately are, in many cases, the most environmentally desirable method for achieving the desired level of vegetation control. The selection of an approved herbicide, coupled with the use of an appropriate surfactant per label recommendations, can provide a higher level of vegetation control, which may reduce the frequency needed to service an area while also reducing physical impacts to the site, as compared to physical means of control. Targeted use of herbicides may eliminate the need to bring in heavy mowing equipment or large hand crews that can be more disruptive to on-site biological resources.

Herbicides are not broadcast sprayed across a channel but are selectively sprayed at the herbaceous or woody plants targeted for removal by the design parameters of each particular stream reach. In upland areas, herbicides are sprayed on maintenance roads to provide clear access and on levee slopes. The lowest recommended rate to achieve Program Renewal objectives of both herbicides and surfactants would be utilized to achieve desired control.

In addition, Valley Water imposes the following restrictions on herbicide application:

- All herbicide usage must have the appropriate biological surveys and clearances.
- All herbicide applications must have a pest control recommendation provided by a California-licensed pest control advisor. A recommendation is provided after each site is surveyed and the most appropriate control methods for the site are determined.
- Foliar applications to woody vegetation are limited to less than 2 inches dbh and typically less than 8 feet in height. Herbicide application may occur in SMP potential range map areas for California red-legged frog and California tiger salamander only when the creek or area is dry, and no rain is forecast for the next 48 hours.
- The use of herbicides on steelhead streams is permitted as follows:
    - Herbicides must only be applied when wind conditions will not result in drift.
    - No direct application of herbicides into water.

- Instream herbicide application methods must be limited to small, low-volume equipment such as hose, handgun, or backpack unit.

References

Bakke, D. 2007. Analysis of Issues Surrounding the Use of Spray Adjuvants with Herbicides. USDA Forest Service, Pacific Southwest Region.

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Smith, B. C., C. A. Curran, K. W. Brown, J. L. Cabarrus, J. B. Gown, J. K., McIntyre, E. E. Moreland, V. L. Wong, J. M. Grassley, and C. E. Grue. 2004. Toxicity of four surfactants to juvenile rainbow trout: Implications for over-water use. *Bulletin of Environmental Contamination and Toxicology* 72 (3): 647-654.

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Appendix H

Vehicle Miles Traveled (VMT) Calculations

Appendix H. Vehicle Miles Traveled (VMT) Calculations

VMT Background

The Governor's Office of Planning and Research (OPR) published the Technical Advisory on Evaluating Transportation Impacts in CEQA in 2018. SB 743 (Steinberg, 2013) updated the way transportation impacts are measured in California for new development projects. It required changes to the guidelines implementing CEQA regarding the analysis of transportation impacts in that the criteria for determining the significance of impacts must promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

CEQA Guidelines Section 15064.3 describes specific considerations for evaluating a project's transportation impacts, identifying vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel.

VMT Methodology

Maintenance trips under SMP-2 and the Program Renewal would be made by four types of vehicles: light-duty vehicles, medium-duty vehicles, heavy-duty vehicles, and other large trucks. For the purposes of this analysis, light-duty vehicles include vehicle types such as minivans and sedans. Medium-duty vehicles include vehicles such as Ford F-150s and Rangers. Heavy-duty vehicles include vehicles such as Ford F-350s, F-450s, crane trucks, water trucks, cargo vans, and Bobtail dump trucks. Other large trucks include vehicle types such as large 10-cubic-yard (cy) sediment removal dump trucks, 20-cy vegetation removal compactors, and other large semi-trucks that are used to haul equipment or similar amounts of materials.

VMT is calculated based on anticipated daily or annual vehicle trips generated by a proposed project. The amount of vehicle trips generated and resulting VMT can be obtained through historical maintenance activity records and estimates of average trip lengths, or through the use of a validated travel demand model that estimates vehicle demand. The former was used for the analysis of SMP-2 activities and was presented in Appendix K, *Traffic and Transportation Calculations*, of the 2012 SMP-2 Final SEIR.

Calculating Average Trip Length

Existing SMP-2 activities occurring between 2014 and 2024 most commonly involved vehicle trips starting from Valley Water headquarters. Using this as a starting point, Valley Water calculated the average straight-line distance between Valley Water headquarters and the center point of each activity done under SMP-2 to be 11.376 miles (J. Lewis, personal communication, March 28, 2025). This estimate was made based on consultation with managers of Valley Water work units responsible for field operations, vegetation management, environmental compliance, and engineering. Work unit managers provided estimates of the number of trips per year associated with their staff based on their records and/or experience in scheduling and managing work. These estimates were then aggregated. The locations of all SMP-2 Notice of Proposed Work (NPW) item project sites were then plotted in ArcGIS, and the mean driving distance between Valley Water Headquarters and those work sites was then calculated (J. Lewis, personal communication, May 22, 2025).

The average straight-line trip length (i.e., 11.376 miles) was then multiplied by a factor of 1.417 to account for the difference between straight-line distance and driving distance.[1] The average trip length under SMP-2 using this calculation is approximately 16.1 miles one way, or approximately 32.2 miles round trip. The service area for the Program Renewal would not change as compared to SMP-2, so it is appropriate to apply the same average trip length to the Program Renewal.

Calculating Annual Program Renewal Vehicle Trips and VMT

Estimates for Program Renewal maintenance vehicle trips generated and resulting VMT are based on Valley Water's data on existing SMP-2 maintenance activities and service areas. Valley Water estimates that operation of the Program Renewal would involve approximately 55 daily round-trip light- and medium-duty maintenance vehicle trips and 12 daily round-trip heavy truck trips (J. Lewis, personal communication, December 6, 2023 and October 10, 2024). These numbers represent the average total number of vehicle trips required per day across all days of the week (regardless of season).

To present this number in the same terms used by the SMP-2 Final SEIR, it must be translated to an estimated total number of vehicle trips per year, based on a five-day work week (the SMP-2 Final SEIR assumed 255 work days per year). Doing this calculation provides approximately 39,270 one-way light- and medium-duty vehicle trips per year and 8,568 one-way heavy-duty truck trips per year, as follows:

Fifty-five round-trip light- and medium-duty maintenance vehicle trips per day equals 110 one-way trips per day, which equates to 770 one-way trips over a seven-day period; this would require 154 one-way trips per day over a five-day work week; multiplying 154 by the number of work days per year (255) results in 39,270 annual one-way light- and medium-duty vehicle trips.

Twelve round-trip heavy-duty truck trips per day equals 24 one-way trips per day, which equates to 168 one-way trips over a seven-day period; this would require 33.6 one-way trips per day over a five-day work week; multiplying 33.6 by the number of work days per year (255) results in 8,568 annual one-way heavy-duty truck trips.

Since the service area for the Program Renewal would not change as compared to SMP-2, it is appropriate to apply the same average trip length resulting from SMP-2 (16.1 miles) to calculate VMT for the Program Renewal, resulting in approximately 770,192 VMT ([39,270 + 8,568] * 16.1).

[1] Boscoe, FP, Henry KA, and Zdeb MS; A Nationwide Comparison of Driving Distance Versus Straight-line Distance to Hospitals; Prof Geogr. 2011 Jun 27; 64(2)

Appendix I

Mitigation Monitoring and Reporting Program

APPENDIX I
MITIGATION MONITORING AND REPORTING PROGRAM

The following mitigation monitoring and reporting program (MMRP) summary table includes the mitigation measures identified in the Santa Clara Valley Water District's (Valley Water's) Final Subsequent Environmental Impact Report (Final SEIR) for the Stream Maintenance Program (SMP) Renewal (Program Renewal). For each mitigation measure, this table identifies monitoring and reporting actions that shall be carried out, VW's responsibility for implementing these actions, and the monitoring schedule. It is the responsibility of Valley Water and the Contractor (if one is involved in implementation) to ensure that actions required for all the mitigation measures listed herein are included in proposed Program Renewal work. Valley Water and/or its contractors are responsible for taking all actions necessary to implement the mitigation measures and to complete monitoring that confirms each mitigation measure has been successfully completed. Valley Water is responsible for oversight and compliance verification. Compensatory mitigation will be carried out annually in accordance with the Notice of Proposed Work (NPW) and Annual Summary Report (ASR).

Acronyms and Abbreviations

ASR	Annual Summary Report
BMP	best management practice
CARB	California Air Resources Board
CCC	Central California Coast
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
cm	centimeter
CNPS	California Native Plant Society
CEQA	California Environmental Quality Act
dBA	A-weighted Decibel
dbh	diameter at breast height
EIR	environmental impact report
Evelyn Project	Stevens Creek Evelyn Avenue Fish Passage Project
F&G	Fish and Game
FESA	Federal Endangered Species Act
GHGRP	Greenhouse Gas Reporting Program
HEPA	High-Efficiency Particulate Air
HMMP	Habitat Mitigation and Monitoring Plan

mm	millimeter
MMRP	Mitigation Monitoring and Reporting Program
MPH	miles per hour
NMFS	National Marine Fisheries Service
NOA	naturally occurring asbestos
NPW	Notice of Proposed Work
PMAs	Permanently Mitigated Areas
Program Renewal	Stream Maintenance Program Renewal
RWQCB	Regional Water Quality Control Board
SCCC	South-Central California Coast
SMP	Stream Maintenance Program
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
Valley Water	Santa Clara Valley Water District
VHP	Santa Clara Valley Habitat Plan

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
Aesthetics			
BIO-12. Compensatory Mitigation for Impacts to Woody Riparian Vegetation Refer to "Biological Resources" below.			
Biological Resources			
BIO-1. Pay Santa Clara Valley Habitat Plan Nitrogen Deposition Fees Valley Water will pay VHP Nitrogen Deposition fees for all Program Renewal Activities, regardless of VHP coverage, through the Habitat Agency's Voluntary Fee Payments Policy. The VHP will require the payment of fees in accordance with the number of daily vehicle trips generated by the Program. Valley Water estimates an average of 67 daily vehicle trips will be necessary to support the Program. This estimate is derived from consultation with management of all Valley Water units that currently implement SMP work to determine the estimated average number of daily vehicle trips associated with the Program Renewal work. Therefore, Valley Water will pay the nitrogen deposition fee associated with 67 daily vehicle trips.	1. Pay VHP nitrogen deposition fees for 67 daily vehicle trips.	1. Annually in accordance with the Notice of Proposed Work (NPW) and Annual Summary Report (ASR).	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
BIO-2. Create or Enhance and Preserve Mitigation Populations of Non-VHP-Covered Special-Status Plant Species If avoidance of non-VHP-covered special-status plants is not feasible as determined by Valley Water biologists and other staff (e.g., planners, engineers, construction supervisors), and more than 5 percent of a population (by occupied area or individuals) of a listed species or more than 10 percent of a population (by occupied area or individuals) of non-listed CNPS 1–4 species that may be detected in the Program Renewal Area in the future (and for which the Habitat Agency's reserve system does not support sufficient populations to offset Program Renewal impacts) would be impacted, Valley Water will provide compensatory mitigation via the creation, enhancement, or preservation of occupied habitat for the impacted species. Creation of habitat and establishment of a new population would be provided at a minimum 1.5:1 (mitigation: impact) ratio; preservation and enhancement of an existing population would be provided at a minimum 1:1 (mitigation: impact) ratio. If mitigation occurs through creation of a	1. Provide compensatory mitigation if special-status plants are to be impacted, per measure specifications. 2. Prepare a 10-year HMMP for the mitigation lands, per measure specifications.	1. Annually in accordance with the NPW and ASR. 2. Annually in accordance with the NPW and ASR.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
new population, seed from the population to be impacted may be harvested (or seed may be obtained from another source at an appropriate location, as determined by a qualified biologist) and used either to expand an existing population or to establish an entirely new population in suitable habitat.			
BIO-3. Augmentation of Spawning Gravel Valley Water will implement gravel augmentation as mitigation for Program impacts to spawning habitat for Central California Coast (CCC) steelhead, South-Central California Coast (SCCC) steelhead, and Pacific lamprey. If more than 100 square feet of sediment removal is proposed along streams supporting these species, a Valley Water fisheries biologist will assess the sediment removal site for spawning and rearing habitat quality prior to the initiation of work. The biologist will determine the extent of sediment that is proposed for removal and that is considered to be "high-quality" spawning gravel, based on the following criteria:	1. Have a Valley Water biologist assess the sediment removal site for steelhead and Pacific lamprey spawning and rearing habitat if more than 100 square feet of sediment removal is proposed, per measure specifications. 2. If more than 100 square feet of high-quality gravel will be removed along streams supporting steelhead and Pacific lamprey, provide compensatory mitigation to measure specifications.	1. Annually in accordance with the NPW. 2. Annually in accordance with the NPW and ASR.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
• Less than 25-30 percent fines less than 6.35 millimeter (mm) (Kondolf 2000, Kondolf and Wolman 1993) • Less than 12-14 percent fines less than 0.85 mm (Kondolf 2000) • D50 (median particle size) of 12.5 to 22.0 mm, based on D50 of rainbow trout and steelhead from 30 to 65-centimeter (cm) length (Kondolf and Wolman 1993), corresponding to a range of 275 to 640 cm of steelhead adults recovered in streams of the San Francisco estuary (Leidy et al. 2005) • Minimum patch size greater than 1.1 m^2 (Trush 1991) The habitat needs to be accessible under typical flows for when the appropriate life stages are present. Suitable depths and velocities must be available during flows typical of spawning season. Factors related to accessibility include depth and velocity criteria, which for spawning, are:			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
• Depth: 10–150 cm (Moyle 2002) • Velocity: 20–155 cm/s (Moyle 2002) If more than 100 square feet of high-quality gravel will be removed along streams supporting steelhead, and Pacific lamprey, compensatory mitigation will be provided via the installation of suitable spawning gravel along the affected creek at a 1:1 (mitigation: impact) ratio on a square footage or acreage basis or through other fisheries habitat projects as approved by appropriate resource agencies. Locations where sediment removal is performed at fish ladders will not require gravel augmentation, as these areas do not provide spawning habitat.			
BIO-4. Augmentation of Instream Complexity Valley Water will provide mitigation for the loss of instream complexity via the in-kind installation of structures that provide such complexity. Prior to sediment removal, bank stabilization, or large woody debris management, the affected area will be surveyed by a Valley Water fisheries biologist to identify any features that provide high-quality	1. Have a Valley Water fisheries biologist identify features that provide high-quality instream habitat complexity for salmonids, per measure specifications.	1. Prior to sediment removal, bank stabilization, or large woody debris management activities.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
instream habitat complexity for salmonids. The biologist will determine that such features are of "high quality" based on a combination of the presence of one or more of the following criteria: • Large woody debris providing cover and refugia from high flow velocities • Deep pools providing rearing habitat and refugia from high flow velocities • Cobble/boulder features providing cover, refugia from high flow velocities, and velocities suitable for good invertebrate drift If such high-quality features must be removed from streams supporting salmonids during Program activities, compensatory mitigation will be provided by the installation of instream complexity features on a 1:1 (impact: mitigation) basis, on the basis of either the number of complexity features or the area that is affected hydraulically by the features that are removed; the fisheries biologist will determine which of these two metrics is appropriate based on the values to fish provided by the impacted features.	2. If it's found that high-quality features must be removed from streams supporting salmonids during Program activities, provide compensatory mitigation by the installation of instream complexity features on a 1:1 basis, per measure specifications.	2. Before or following program activities, within one year of the impact.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
Thus, one instream complexity feature will be installed for every one that is removed, or an instream complexity feature hydraulically affecting roughly the same area of the feature(s) removed will be installed. Impacts to instream complexity features may also be mitigated through other projects that benefit salmonids, such as passage improvement projects, when approved of by appropriate resource agencies. As examples, enhancing instream complexity may involve: • enlarging an existing large woody debris feature; • anchoring a large woody debris feature; • geomorphically shaping an instream bar or bed feature for improved habitat; • enhancing a pool feature threatened by sedimentation; or • enhancing streambed conditions to increase the range of flow velocity and habitat conditions. Priority for these mitigation activities will be given to maintenance sites where instream features cannot be retained during construction because of conflicting objectives. For example, if			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
a channel pool configuration cannot be retained during a bank protection job and the area is devoid of other complex pool features, then this area will be evaluated for the addition of an instream complexity feature. In addition to enhancing existing features, new instream features may be developed to achieve several habitat objectives, including increasing pool habitat in homogenized stream reaches, providing escape cover for rearing and spawning fish, deepening feeding areas in riffle habitat, creating a variety of stream flow velocities for cover, sorting gravel, and providing resting areas for upstream migration. Additionally, improving instream function can benefit other aquatic flora and fauna by improving the overall stream complexity for which these species depend on for survival. If effective, such new instream complexity features (particularly in highly modified, urban streams) can augment or replace existing structural features required for successful reproduction and rearing of native fish and amphibians in the freshwater environment. Newly developed instream habitat improvements may use log structures, boulder structures, or a combination of both log and boulder structures to achieve more complex habitats. Possible			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
configurations of boulders or logs include weirs, clusters, single and opposing wing deflectors, spider logs, and digger logs. The construction materials selected for each instream complexity feature will depend on the target objective and site conditions. The fisheries biologist will prepare specifications for the mitigation, including size, type, and configuration of the feature. The mitigation will be implemented prior to or within 1 year following the impact. The fisheries biologist will then inspect the completed complexity feature to assure that it meets the criteria for "high quality" instream complexity listed above.			
BIO-5. Salmonid Habitat Restoration Projects Valley Water will construct large-scale salmonid habitat restoration projects, involving either passage improvement; habitat feature development, such as large woody debris, gravel, and instream complexity; or other methods to improve stream function for salmonid habitat. These projects would be implemented to reduce residual impacts of non-VHP-covered activities due to the loss of salmonid habitat features to a less than significant level by replacing lost habitat functions and values through restoration, preservation, or enhancement. The Coyote 10B, Stevens Creek Evelyn Avenue Fish Passage, and	1. Construct large-scale salmonid habitat restoration projects to improve stream function for salmonid habitat. 2. Coordinate with regulatory agencies, such as NMFS, to ensure habitat restoration projects meet requirements for mitigation of Program impacts. 3. Conduct monitoring to document the success of each restoration project.	1. Annually in accordance with the NPW and ASR. 2. Annually in accordance with the NPW and ASR. 3. Annually in accordance with the NPW and ASR. 4. Annually in accordance with the NPW and ASR.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
Pickell's Dam Removal mitigation projects are among the potential projects that restore salmonid habitat, as follows: • Coyote 10B is an abandoned gravel pond that could be enhanced to provide seasonal wetland and riparian habitat. The Coyote 10B site is located upstream of the Hwy 101/State Route 85 interchange on the east side of Valley Water's Coyote Dam. In 2005, the pond was measured at an average depth of approximately 8-10 feet and a maximum depth of 13 feet. The Coyote 10B site has the potential to provide approximately 7 acres of seasonal wetland, riparian habitat, and high-water refugia for fish as SMP-3 mitigation. • The Stevens Creek Evelyn Avenue Fish Passage Project (Evelyn Project) was initially constructed in 2015. Valley Water is developing new designs for chutes, pools, and roughened channels, as well as design improvements to the channel profile, cross-section geometry, and engineered streambed material, for a reconstructed Evelyn Project. The goal of the new design approach is to provide a			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
longer-term sustainable flow solution that supports fish migration in a creek zone that is highly dynamic and subject to geomorphic change during large flow events. An operations and maintenance guidance document for this project will be prepared as part of the final design and planning process. Because different regulatory agencies have different mandates, specific details of how salmonid habitat restoration projects would provide mitigation for Program Renewal activities would be coordinated with individual agencies, particularly NMFS. Valley Water will conduct monitoring to document that the mitigation is operational and successfully providing the functions and values needed to offset Program impacts to fish, as described in detail in Appendix F.			
BIO-6. Avoid Impacts on the California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog, and their Habitat To the maximum extent feasible, Valley Water will avoid conducting non-VHP-covered maintenance activities that do not provide an ecological benefit within portions of the Program Renewal Area that may be occupied by the	1. Use existing mapping to determine if Program impacts would occur within the range of listed species, and if compensatory mitigation is needed. 2. Have a Valley Water biologist determine if the impact areas	1. At the end of each calendar year. 2. At the end of each calendar year.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
California tiger salamander, California red-legged frog, or foothill yellow-legged frog as shown on Figures 3.4-3, 3.4-4, and 3.4-5 in Section 3.4, "Biological Resources." Ecologically beneficial activities and activities located within existing PMAs (for the activity being performed) do not require compensatory mitigation. Whether an activity is ecologically beneficial will be determined by a qualified Valley Water biologist. If all non-ecologically beneficial impacts within areas occupied by the California tiger salamander, California red-legged frog, or foothill yellow-legged frog and located outside of existing PMAs (for the activity being performed) are avoided, no compensatory mitigation (i.e., Mitigation Measure BIO-7) is required. To determine whether Program Renewal impacts would occur within the potential range of these species, Valley Water will rely on the mapping in Figures 3.4-3, 3.4-4, and 3.4-5. This mapping may be modified as appropriate over the course of the period 2027–2036 based on new information. In addition, a Valley Water biologist will determine whether the impact areas support suitable habitat for one or more of these species. Developed and intensively managed agricultural lands without mammal burrows are considered unsuitable; all other land cover types are	support habitat for one of more of the species.		

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
considered potential California tiger salamander and California red-legged frog habitat. Suitable foothill yellow-legged frog habitat consists of stream habitat and adjacent undeveloped areas.			
BIO-7. Compensatory Mitigation for Impacts on the California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog, Northwestern Pond Turtle, and their Habitat If the assessment described under Mitigation Measure BIO-6 determines that work activities would occur within areas potentially supporting California tiger salamanders, California red-legged frogs, and/or foothill yellow-legged frogs, the impact is not in an existing PMA (for the activity being performed), and the impact is not avoided either through avoiding the work activity or through planning work in a way that results in an overall neutral or positive effect on the site's habitat function for the species, Valley Water will provide mitigation to compensate for impacts on these species and their habitat. At the end of each year's maintenance period, Valley Water will determine the extent of impacts to lands that are both within the potential range of these species and within potentially suitable habitat for the species.	1. Pay VHP impact fees or provide mitigation to compensate for impacts on these species and their habitat, if found necessary, per measure specifications.	1. At the end of each calendar year.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
If work activities will impact wetland, aquatic, and/or riparian habitats that support northwestern pond turtles, Valley Water will provide mitigation to compensate for impacts on this species and its habitat. At the end of each year's maintenance period, Valley Water will determine the extent of impacts to lands supporting this species. Compensation for these effects may be provided by Valley Water via the payment of VHP impact fees through the Habitat Agency's Voluntary Fee Payments Policy. The VHP will require the payment of fees in accordance with the types and acreage of all land cover types impacted by the activity (including areas within and outside of waters of the U.S./state, and when no impacts on individual California tiger salamanders, California red-legged frogs, foothill yellow-legged frogs, and/or northwestern pond turtles have occurred). Alternatively, if Valley Water staff, in consultation with resource agencies, determines that impacts on these species' habitats occur within riparian and wetland habitats, mitigation may be provided by Valley Water via the implementation of Mitigation Measures BIO-12 and/or BIO-13, as applicable. The mitigation provided will be required to be located in areas where habitat			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
creation, restoration, and preservation will benefit the affected species, and such that mitigation according to these measures occurs at a ratio of no less than 1:1 (on an acreage basis). Valley Water will determine whether impacted habitat is suitable for this species on the basis of surveys or comparison of habitat conditions to those in known occupied areas.			
BIO-8. Island Ponds Mitigation Permanent impacts to tidal marsh habitat that is in the range of these species will be mitigated by Valley Water through application of Island Ponds mitigation credit. When this is done, the mitigation will be considered to function as mitigation in perpetuity for that location. Temporary impacts to tidal marsh and permanent impacts to habitats other than tidal marsh within the mapped range of these species will be mitigated using the mitigation options described in the SMP Manual and summarized under "Mitigation Approach" above (e.g., land acquisition and conservation, trash cleanup, seeding, native plant revegetation, encampment removal, bank rehabilitation, etc.). Temporary mitigation will not be considered mitigation in perpetuity and subsequent impacts in that location will require additional mitigation.	1. Manage remaining mitigation credits for tidal marsh restoration at Island Ponds. 2. Mitigate temporary impacts to tidal marsh and permanent impacts to other habitats.	1. Annually in accordance with the NPW and ASR. 2. Annually in accordance with the NPW and ASR.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
Physical breaching of the Island Pond levees, and other physical work required for this tidal restoration has already occurred, and no further activities (other than continued monitoring of marsh development per the 2002–2012 SMP monitoring requirements) are proposed by Valley Water. Maintenance activities that occur within these species' ranges, but which are anticipated to have a neutral or positive effect on the site's habitat function, will not require compensatory mitigation. Only maintenance activities that result in a negative impact to the species' habitat as determined by a qualified biologist will require compensatory mitigation to be provided by Valley Water. Projects which are modified to provide a net positive effect on the site's function as habitat for these species will not require mitigation. If all remaining mitigation credit in the Island Ponds is exhausted during the course of the Program Renewal, Valley Water can propose additional mitigation projects to offset impacts to tidal marsh species habitats.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
BIO-9. Compensatory Mitigation for Impacts on Least Bell's Vireo and Yellow-Breasted Chat Nesting and Foraging Habitats If non-VHP-covered work activities would occur within areas potentially supporting nesting least Bell's vireos and/or yellow-breasted chats outside of existing PMAs, Valley Water will provide mitigation to compensate for impacts on habitat for these species. Only activities that result in a negative impact to Least Bell's vireo habitat as determined by a qualified biologist will require mitigation. At the end of each year's maintenance period, Valley Water will determine the extent of impacts to lands that are within potentially suitable habitat for these species. Compensation for these effects will be provided via the payment of VHP impact fees through the Habitat Agency's Voluntary Fee Payments Policy. The VHP will require the payment of fees in accordance with the types and acreage of all land cover types impacted by the activity (including when no impacts on individual Least Bell's vireos and yellow-breasted chats have occurred). Alternatively, mitigation may be provided via the implementation of Mitigation Measures BIO-12. The mitigation provided will be required to be located in areas where habitat creation,	1. Retain a qualified biologist to determine if activities would result in negative impacts to Bell's vireo habitat and provide mitigation to compensate for impacts on habitat for Least Bell's Vireo and Yellow-Breasted Chat Nesting and Foraging Habitats, if needed, per measure specifications. 2. Determine the extent of impacts to lands that are within potentially suitable habitat for these species. 3. Pay VHP impact fees, or if Mitigation Measure BIO-12 is chosen as compensatory mitigation instead, verify that impacted habitat is suitable for these species on the basis of surveys or comparison of habitat conditions to those in known occupied areas.	1. At the end of each calendar year. 2. At the end of each calendar year. 3. At the end of each calendar year.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
restoration, and preservation will benefit the affected species, and such that mitigation according to these measures occurs at a ratio of no less than 1:1 (on an acreage basis). Valley Water will determine whether impacted habitat is suitable for these species on the basis of surveys or comparison of habitat conditions to those in known occupied areas.			
BIO-10. Compensatory Mitigation Impacts on Yellow Warbler Breeding Habitat For impacts to occupied yellow warbler breeding habitat (i.e., riparian habitat known to have been occupied in recent years by the species) in areas not located in an existing PMA for the activity being performed, implementation of Mitigation Measure BIO-12 will be required to be located in areas where riparian habitat creation, restoration, and preservation will benefit yellow warblers (e.g., in relatively undeveloped reaches of creeks rather than in creeks surrounded closely on both sides by development), such that mitigation according to these measures occurs at a ratio of no less than 1:1 (on an acreage basis). Valley Water will determine whether impacted riparian habitat is suitable for this species on the basis of breeding-season surveys or comparison of habitat conditions to those in known occupied areas.	1. Implement Mitigation Measure BIO-12 in areas where riparian habitat creation, restoration, and preservation will benefit yellow warblers, per measure specifications. 2. Use breeding-season surveys or comparison of habitat conditions to determine whether impacted riparian habitat is suitable for yellow warbler.	1. Annually in accordance with the NPW and ASR. 2. Annually in accordance with the NPW and ASR.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
BIO-11. Provide Alternative Bat Roost If an occupied roost supporting a pallid bat or Townsend's big-eared bat maternity colony of any size, a pallid bat or Townsend's big-eared bat nonbreeding roost of five or more individuals, a colony of at least 10 big brown bats, or a colony of at least 20 individuals of other non-special-status bats is to be removed by the Program Renewal, Valley Water will retain a qualified biologist to design and determine an appropriate location for an alternative roost structure. A qualified biologist will determine an appropriate location for the alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity. The roost structure will be built to specifications as determined by a qualified biologist, or it may be purchased from an appropriate vendor. The structure will be placed as close to the impacted roost site as feasible. Valley Water will monitor the roost for up to 3 years (or until occupancy is determined, whichever occurs first) to determine use by bats. If by Year 3 bats are not using the structure, a qualified bat biologist, in consultation with the CDFW, will identify alternative roost designs or locations for placement of the roost, and monitoring of the new roost will occur for an	1. Retain a qualified biologist to design and determine an appropriate location for an alternative roost structure, if necessary. 2. Monitor the roost for up to 3 years to determine use by bats. 3. If by Year 3 bats are not using the structure, retain a qualified bat biologist, if necessary, to consult with CDFW and identify alternative roost designs or locations for placement of the roost, if needed. 4. Monitor the new roost for up to an additional 3 years.	1. Annually in accordance with the NPW. 2. Annually in accordance with the NPW and ASR. 3. Annually in accordance with the NPW and ASR. 4. Annually in accordance with the NPW and ASR.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
additional 3 years (or until occupancy by bats has been verified).			
BIO-12. Compensatory Mitigation for Impacts to Woody Riparian Vegetation The Program's compensatory mitigation package, which is detailed in Chapter 10 of the Manual, shall be implemented to compensate for new impacts (i.e., impacts that do not fall within an existing PMA for the activity being performed) on woody riparian vegetation from non-VHP-covered activities. No compensatory mitigation will occur for corrective pruning. Following the procedure described in Appendix F, Valley Water would refine the quantification of impacts to riparian vegetation that occur during a specific year, tallying the impact totals at the end of the year, and compensatory mitigation will be implemented the following year, in many cases. Exceptions will occur in cases in which compensatory mitigation is incorporated directly into the Program Renewal work areas; in those cases, compensatory mitigation may be implemented during the same year in which	1. Implement a compensatory mitigation package for new impacts on woody riparian vegetation from non-VHP-covered activities using one or more of the options listed. 2. Tally impacts to riparian vegetation that occurred throughout the year so that compensatory mitigation can be implemented (often in the following year).	1. Annually in accordance with the NPW and ASR. 2. Annually in accordance with the NPW and ASR. 3. If compensatory mitigation is incorporated directly into the SMP work areas, mitigation may be implemented during the same year in which impacts occur.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
impacts occur. Details regarding performance criteria for mitigation, as well as for monitoring and reporting, are described in Appendix F. Valley Water will mitigate for temporary and permanent impacts to riparian vegetation from non-VHP-covered activities via one or more of the following options: • Develop new land acquisition and conservation-based projects to create new PMAs as mitigation for impacts to riparian habitats. • Annual mitigation approaches for activities that are more infrequent, and where establishing new PMAs would not be appropriate, such as encampment cleanup and bank rehabilitation, a grant program to fund projects by local watershed groups, trash removal, revegetation, concrete removal, and post-wildfire rehabilitation. • For impacts to nontidal wetlands and aquatic habitats, the payment of fees via the Habitat Agency's Voluntary Fee Payments Policy. This option would be			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
subject to consistency with VHP requirements and Habitat Agency approval, and contingent on the Habitat Agency agreeing to use Valley Water's fees to provide mitigation for the resource (i.e., riparian habitat) being affected. Individual, stand-alone restoration projects that could provide either permanent or temporary annual mitigation, such as the following: • Riparian revegetation would be conducted to establish and/or enhance habitat for native wildlife species while providing shade, sources of organic matter, coarse woody debris, improved root and soil structures and other benefits. Revegetation would occur in the same watershed as the impact and would follow the typical planting palette provided in Chapter 10 or a site-specific palette would be used. ~~Removal of trees >6" dbh that is not mitigated through the VHP will be mitigated through revegetation at a minimum 1:1 ratio.~~ Removal of non-invasive trees >6" dbh that is not mitigated through the VHP will be mitigated through revegetation at either a 2:1 or 2:1 (replacement tree to removed tree). All native trees >6" dbh			

*When applicable, a contractor may be responsible for implementation.

that are removed will be mitigated at a 3:1 ratio. All non-native trees >6" dbh that are not classified as invasive species will be mitigated at a 2:1 ratio.			
Mitigation Measures	**Valley Water Responsibility***	**Timeframe for Implementation**	**Completion Date and Initials**
~~For each removed non-invasive tree >6" dbh that provides unique functions and values and is otherwise healthy that is removed, Valley Water will install one native tree on a mitigation site within the same watershed.~~ The removal of >6" dbh western sycamores and native oaks must be replaced in-kind; otherwise, there is no requirement to match species when replacing trees. • Valley Water in consultation with resource agencies may develop reach characterization sheets for areas where frequent maintenance activities occur. These sheets would describe biological resources, water quality, and ecological functions within the maintenance area, and identify ongoing and future maintenance needs, opportunities to avoid and minimize impacts to sensitive habitats as well as potential restoration opportunities. This information would be used for planning purposes to maintain a site in a state of ecological equilibrium. If			

*When applicable, a contractor may be responsible for implementation.

vegetation management (other than the removal of trees >6" dbh, the conversion			
Mitigation Measures	**Valley Water Responsibility***	**Timeframe for Implementation**	**Completion Date and Initials**
of habitat from one type to another, or activities that impact the site's function as habitat for special-status species) within a reach can be directed towards achieving that reach's target ecological function and value, then the maintenance work may be exempt from compensatory mitigation requirements. • Valley Water will enhance ecosystem recovery following particularly large and destructive wildfires. Mitigation activities may include, but are not limited to, revegetation and hydroseeding to reduce erosion, invasive plant species control, road repair, and removing critical safety hazards (e.g., dead or dying trees) thereby promoting and supporting habitat for animal and plant species and reducing risk of additional fires that could further damage habitat. • Valley Water may develop reach characterization sheets for areas where frequent maintenance activities occur. These sheets would describe biological resources, water quality, and ecological			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
functions within the maintenance area, and identify ongoing and future maintenance needs, opportunities to avoid and minimize impacts to sensitive habitats as well as potential restoration opportunities. This information would be used for planning purposes to maintain a site in a state of ecological equilibrium. If vegetation management (other than the removal of trees >6" dbh, the conversion of habitat from one type to another, or activities that impact the site's function as habitat for special-status species) within a reach can be directed towards achieving that reach's target ecological function and value, then the maintenance work may be exempt from compensatory mitigation requirements. • Valley Water will enhance ecosystem recovery following particularly large and destructive wildfires. Mitigation activities may include, but are not limited to, revegetation and hydroseeding to reduce erosion, invasive plant species control, road repair, and removing critical safety hazards (e.g., dead or dying trees)			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
thereby promoting and supporting habitat for animal and plant species and reducing risk of additional fires that could further damage habitat. • Valley Water will mitigate impacts to sensitive riparian communities, including sycamore alluvial woodland, oak woodland, and high-quality occurrences of cottonwood-dominated forest in-kind by focusing on the enhancement, preservation, and/or restoration of that sensitive community type. "High-quality" would be determined by a qualified biologist based on criteria such as evidence of natural regeneration and the presence of multi-layered and multi-aged stands. It is possible that this mitigation measure may be refined during permitting with the USACE, RWQCB, and CDFW to be equally or more effective, in which case the refinements required by these resource agencies would be implemented.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
BIO-13. Compensatory Mitigation for Permanent Impacts to Wetlands and Aquatic Habitats The Program's compensatory mitigation package, which is detailed in Chapter 10 of the SMP Manual, shall be implemented to compensate for non-VHP-covered permanent new impacts (i.e., impacts that do not fall within an existing PMA for the activity being performed) on wetlands and aquatic habitats. Details regarding performance criteria for mitigation, as well as for monitoring and reporting, are described in Appendix F. Valley Water will mitigate for permanent impacts to wetlands and aquatic habitats via one or more of the following options: • Establishing new PMAs for maintenance activities that result in permanent impacts. Mitigation ratios will be 1.5:1 or as determined in a mitigation site plan for nontidal habitats, and 1.2:1 for tidal habitats. • Use remaining mitigation credits from the Island Ponds (for tidal habitats) and Pajaro Freshwater Wetland (for nontidal habitats) mitigation projects for activities that result in permanent impacts. Mitigation ratios will be 1.5:1 or as	1. Implement a compensatory mitigation package to address permanent new impacts to wetlands and aquatic habitats not covered by the VHP by using one or more of the listed options. 2. Tally impacts to wetland and aquatic habitats that occurred throughout the year so that compensatory mitigation can be implemented (often in the following year). 3. Conduct mitigation monitoring to document that the mitigation is operational and successful. 4. Work with USACE, RWQCB, and CDFW and implement changes if this measure is refined during the permitting process.	1. Annually in accordance with the NPW. 2. Annually in accordance with the NPW. 3. Annually in accordance with the NPW. 4. Annually in accordance with the NPW.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
determined in a mitigation site plan for nontidal habitats, and 1.2:1 for tidal habitats. • The removal of concrete from below top of bank, where softscape is left behind in the footprint of the concrete removal work area. Mitigation credit would be calculated based on the area of concrete removed multiplied by 3 for modified channels and unmodified channels. • For impacts to nontidal wetlands and aquatic habitats, the payment of fees via the Habitat Agency's Voluntary Fee Payments Policy. This option would be subject to consistency with VHP requirements and Habitat Agency approval, and contingent on the Habitat Agency agreeing to use Valley Water's fees to provide mitigation for the resource (e.g., wetlands or aquatic habitats) being affected. If Valley Water provides the mitigation, Valley Water will conduct monitoring to document that the mitigation is operational and successfully providing the functions and values needed to offset Program Renewal impacts to riparian habitats, as described in detail in Appendix F.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
If the Habitat Agency provides the mitigation, the Habitat Agency will conduct any necessary monitoring, and no additional monitoring or documentation is necessary. It is possible that this mitigation measure may be refined during permitting with the USACE, RWQCB, and CDFW to be equally or more effective, in which case the refinements required by these resource agencies would be implemented.			
Greenhouse Gas Emissions			
GHG-1. GHG Emissions Reduction Practices for Maintenance Activities Valley Water shall require the contractor to implement mobile source and other GHG emission reduction measures. All requirements shall be included in applicable bid documents, purchase orders, and constructs, with the contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and maintenance activities. The measures to include are as follows: • Use zero-emission and hybrid-powered equipment to the greatest extent possible, provided adequate electricity supply and infrastructure is available in	1. Ensure all contractors implement mobile source GHG emission reduction measures, per measure specifications. 2. Ensure mobile source GHG emission reduction requirements are included in all relevant contractor documents and that contractors demonstrate the ability to supply the compliant on- or off-road construction equipment for use.	1. During construction. 2. Prior to the start of construction.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
the planned work area. The performance criteria for meeting this standard are that at least two commercial rental facilities in the San Francisco Bay Area Air Basin are available, and that electricity and charging infrastructure be located near the planned work area. • Require that all on-road heavy-duty trucks to meet the most stringent emissions standard as a condition of contract; this currently means that trucks need to be a 2015 model year (or newer). • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than two minutes. Provide clear signage that posts this requirement for workers at the entrances to the site. • Use CARB-approved renewable diesel fuel R99 or R100 in off-road construction equipment and on-road trucks. • Use USEPA SmartWay certified trucks for deliveries and equipment transport.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
• Require that all construction equipment be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic in accordance with the manufacturer's specifications and determined to be running in proper condition prior to operation. • Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers, and offer meal options on site or shuttles to nearby meal destinations for construction employees. • Recycle or salvage nonhazardous construction and demolition debris. • Develop a plan to efficiently use water for adequate dust control because substantial amounts of energy can be consumed during the pumping of water.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
GHG-2. GHG Emissions Mitigation Program Valley Water will purchase emissions credits annually to offset GHG emissions increases from the Program Renewal. The total credits will be equal to the annual increase in emissions compared to the current SMP-2, which would be approximately 832 $MTCO_2e$ per year, reduced by any annual emissions reductions from implementing Mitigation Measure GHG-1 that can be demonstrated. Valley Water will prioritize purchase of offsets that are not "otherwise required" (CEQA Guidelines Section 15126.4(c)(3)) using the following preference hierarchy: within the San Francisco Bay Area Air Basin, originating within California, and originating in other states with offset laws at least as strict as California's. However, all offset credits shall meet the following validation criteria as defined by 17 CCR 95802: the offset credits must be real, permanent, quantifiable, verifiable, enforceable, and additional. Offset protocols must also be consistent with CARB requirements under 17 CCR 95972. Offset credits shall be registered with a recognized and reputable carbon registry (e.g., Climate Action Reserve, the American Carbon Registry, or Verra).	1. Purchase emission credits to offset Program Renewal-related GHG emissions, per specifications in the measure. 2. Maintain documentation of any GHG offsets. 3. Assess opportunities to reduce/ offset Program Renewal emissions once the GHGRP is adopted.	1. Annually in accordance with the NPW. 2. Annually in accordance with the NPW and ASR. 3. Annually in accordance with the ASR.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
Valley Water will maintain documentation of any GHG offsets, ensuring that the offsets are real, permanent, quantifiable verifiable, enforceable, and additional. If in the future Valley Water approves a qualified GHGRP consistent with CEQA Guidelines Section 15183.5(b) and the Program Renewal is demonstrated to be consistent with the GHGRP, then the annual requirements for offsets may be replaced by implementing applicable measures in the GHGRP.			
Hazards and Hazardous Materials			
HAZ-1. Implement Dust Control Measures in Areas Containing NOA and in the Event of High Risk of Valley Fever Valley Water will be responsible for implementing the following dust control measures when conducting ground-disturbing activities using mechanized heavy equipment in areas containing NOA (as identified in Figure 3.8-1) consistent with the BAAQMD NOA Technical Advisory Requirements (BAAQMD 2002). When working in an area identified as containing NOA, if there are circumstances that suggest that NOA may not be present in the disturbed area (such as when working in areas that consist of fill brought in from outside the area), testing for NOA would be conducted. If testing determines that the soil	1. Test for NOA in areas identified as containing NOA and in certain circumstances (such as when fill is brought in from outside areas). 2. Ensure contractor compliance with dust control measures in areas containing NOA, per the specifications in the measure. 3. If Valley Fever reaches endemic levels in Santa Clara County, Valley Water Operations and Maintenance staff will consult with Valley Water's Environmental Health and	1. Prior to the start of construction and during construction. 2. Prior to the start of construction and during construction. 3. Prior to the start of construction and during construction.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
does not contain significant amounts of NOA, the measures included below would not need to be implemented. However, if testing is not conducted in these areas or if testing reveals the presence of significant amounts of NOA, the following dust control measures will be implemented: • Prior to any ground disturbance, areas to be graded or excavated shall be kept adequately wet with water to minimize visible emissions from the release of particulate matter into the air. • Storage piles containing NOA shall be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile. Covers, when used, shall be physically secured and maintained throughout their use. • As needed to prevent transportation of soil containing NOA, equipment shall be washed down after use and prior to the equipment moving from the work area onto a paved public road. Wheels shall be washed prior to moving equipment from construction areas containing NOA to areas that do not contain NOA.	Safety unit to establish measures that reduce the risk of Valley Fever infection.		

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
• Construction vehicles shall be limited to 15 miles per hour (mph) or less on the work site. Vehicles hauling NOA-containing materials outside NOA-containing areas shall have loads wetted and/or covered such that no visible emissions are generated. Under no circumstances shall haul trucks be allowed to transport NOA-containing materials in a manner that allows visible particle emissions from either the wheels while traveling over NOA-containing materials or from the load of the truck. • Suspension of ground-disturbing activities shall be required when wind speeds exceed 20 mph for a minimum of 30 minutes. • Work boot wash stations shall be provided at the maintenance site. • Vehicles that exit the site to a public paved road from an unpaved area shall utilize track-out prevention and control measures, including a gravel pad, a tire shaker, or a wheel wash system. Visible track-out from a paved public road shall be removed where vehicles exit the work site by using wet sweeping or a high-efficiency particulate air (HEPA) filter or			

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Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
vacuum device equipped with an equivalent particulate filter at the end of each day. • The Valley Water Environmental Health and Safety unit shall be consulted to determine whether modifications to these measures or additional safety measures are needed when working in an area that contains NOA. Valley Fever is currently relatively uncommon in Santa Clara County. In the event that Valley Fever reaches highly endemic levels in Santa Clara County, Valley Water Operations and Maintenance staff will consult with Valley Water's Environmental Health and Safety unit to establish measures that reduce the risk of Valley Fever infection. Where appropriate, these measures may incorporate measures for NOA listed above or adaptations thereof.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
Noise and Vibration			
NZ-1. Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards. Valley Water or its contractors shall implement the following noise reduction measures: 1. All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment. 2. The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists. 3. Leaf blowers must be certified to be 65 dBA or less measured at 50 feet from the source of the noise. 4. Powered garden tools must not exceed 75 dBA at 25 feet from the source of the noise. 5. Woodchippers must not exceed 100 dBA at any point 25 feet from the source of the noise.	1. Ensure compliance with noise reduction measures, per measure specifications.	1. Prior to the start of construction and during construction.	

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
6. At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences. 7. Unnecessary idling of internal combustion engines shall be prohibited for a duration of longer than five minutes. 8. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible. 9. The required construction-related noise mitigation plan shall also specify that haul truck deliveries are to occur within the same range of hours specified for construction equipment. 10. Neighbors located adjacent to the construction site shall be notified in writing of the construction schedule.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
11. Use of temporary sound barriers shall be implemented in areas located near sensitive receptors to reduce noise levels to the extent feasible. Temporary noise barriers shall be rated to reduce noise at least 5 dBA. 12. Pile driving activities will use the least noisy method that would generate the least amount of vibration possible at a location, with hydraulic press being the preferred method, followed by the vibratory method. If no other method is feasible for the location, impact pile driving shall be used. 13. Avoid conflicts with local noise ordinances during prescribed herbivory. Prior to commencing prescribed herbivory treatments, Valley Water will post signs including contact information, including a daytime telephone number, of the project representative, who may be contacted regarding noise complaints. Valley Water will take into consideration future use of herbivory treatments in areas that receive noise complaints and may adjust the limits of treatment areas to be further from sensitive receptors.			

*When applicable, a contractor may be responsible for implementation.

Mitigation Measures	Valley Water Responsibility*	Timeframe for Implementation	Completion Date and Initials
14. Valley Water or the construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.			
Water Quality			
Mitigation Measure BIO-3: Augmentation of Spawning Gravel **Mitigation Measure BIO-4: Augmentation of Instream Complexity** **Mitigation Measure BIO-5: Salmonid Habitat Restoration Projects** Refer to "Biological Resources" above			

Cumulative Impacts

For significant cumulative impacts, mitigation measures and their monitoring/reporting programs are the same as for the corresponding direct significant impacts, as presented above.

*When applicable, a contractor may be responsible for implementation.

References

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