DRAFT PROGRAM
ENVIRONMENTAL IMPACT REPORT

PIPELINE MAINTENANCE PROGRAM

SANTA CLARA VALLEY WATER DISTRICT

Valley Water

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Acronyms and Abbreviations

A-weighted sound level ..... dBA

Above ground Storage Tank Program ..... APSA

above mean sea level ..... amsl

adjustable speed drives ..... ASDs

American Water Works Association ..... AWWA

annual average daily traffic ..... AADT

Asbestos Airborne Toxic Control Measure ..... ATCM

Assembly Bill ..... AB

Association of Bay Area Governments ..... ABAG

avoidance and minimization measures ..... AMMs

Bay Area Air Quality Management District ..... BAAQMD

best management practices ..... BMPs

Burbank Sanitary District ..... BSD

calibrated years before the present ..... cal BP

California Accidental Release Program ..... CalARP

California Air Resources Control Board ..... CARB

California Ambient Air Quality Standards ..... CAAQS

California Clean Air Act ..... CCAA

California Code of Regulations ..... CCR

California Department of Conservation ..... DOC

California Department of Fish and Wildlife ..... CDFW

California Department of Forestry and Fire Protection ..... CAL FIRE

California Department of Transportation ..... Caltrans

ACRONYMS AND ABBREVIATIONS

California Division of Occupational Safety and Health ..... Cal/OSHA

California Endangered Species Act ..... CESA

Countywide Integrated Waste Management Plan ..... CIWMP

California Energy Commission ..... CEC

Cupertino Sanitary District ..... CuSD

California Environmental Protection Agency ..... CalEPA

California Environmental Quality Act ..... CEQA

California Food and Agriculture Code ..... FAC

California Geological Survey ..... CGS

California Historical Resources Information System ..... CHRIS

California Native Plant Society ..... CNPS

California Natural Diversity Database ..... CNDDB

California Office of Environmental Health Hazard Assessment ..... OEHHA

California Office of Historic Preservation ..... OHP

California Public Resources Code ..... CPRC

California Register of Historic Resources ..... CRHR

California Toxics Rule ..... CTR

California Stormwater Quality Association ..... CASQA

carbon dioxide equivalent ..... CO_2e

carbon monoxide ..... CO

Corporate Average Fuel Economy ..... CAFE

County Sanitation District 2-3 ..... CSD 2-3

Certified Unified Program Agency ..... CUPA

Clean Air Act ..... CAA

Clean Air Plan ..... CAP

Clean Water Act ..... CWA

Climate Change Action Plan ..... CCAP

ACRONYMS AND ABBREVIATIONS

closed-circuit television ..... CCTV

Community Noise Equivalent Level ..... CNEL

Congestion Management Program ..... CMP

Council of San Benito County Governments ..... SBCOG

Countywide Water Reuse Master Plan ..... CoRe Plan

Cross County Bicycle Corridors ..... CCBCs

cubic feet per second ..... cfs

Department of Toxic Substances Control ..... DTSC

Dichlorodiphenyltrichloroethane ..... DDT

El Niño Southern Oscillation ..... ENSO

Environmental Impact Report ..... EIR

Environmental Screening Levels ..... ESLs

Essential Fish Habitat ..... EFH

Executive Order ..... EO

Farmland Mapping and Monitoring Program ..... FMMP

Federal Emergency Management Agency ..... FEMA

Federal Endangered Species Act ..... FESA

Federal Insecticide, Fungicide, and Rodenticide Act ..... FIFRA

Federal Responsibility Area ..... FRA

Federal Transportation Authority ..... FTA

fine particulate matter with a diameter of 2.5 microns and smaller ..... $PM_{2.5}$

Fire Hazard Severity Zone ..... FHSZ

Fire and Resource Assessment Program ..... FRAP

fishery management plans ..... FMPs

geographic information system ..... GIS

gigawatt-hours ..... GWh

greenhouse gas ..... GHG

ACRONYMS AND ABBREVIATIONS

Groundwater Sustainability Plan	GSP
habitat conservation plan	HCP
Hazardous Materials Business Plan	HMBP
Hazardous Materials Compliance Division	HMCD
Health and Safety Code	HSC
hydrogen sulfide	H_2S
In-Use Off-Road Diesel-Fueled Fleets Regulation	Off-Road Regulation
Lake and Streambed Alteration Agreements	LSAAs
leaking underground storage tank	LUST
light rail transit	LRT
Local Responsibility Area	LRA
Low Emission Vehicle	LEV
Metropolitan Transportation Commission	MTC
Merced County Association of Governments	MCAG
Methane	CH_4
metric tons	MT
Migratory Bird Treaty Act	MBTA
Monterey Bay Air Resource District	MBARD
Most Likely Descendant	MLD
Municipal Regional Stormwater permit	Regional Municipal Permit
Notice of Preparation	NOP
National Ambient Air Quality Standards	NAAQS
National Highway Traffic Safety Administration	NHTSA
National Historic Preservation Act	NHPA
National Marine Fisheries Service	NMFS
National Pollution Discharge Elimination System	NPDES
National Register of Historic Places	NRHP

ACRONYMS AND ABBREVIATIONS

Native American Graves Protection and Repatriation Act ..... NAGPRA

Native American Heritage Commission ..... NAHC

natural community conservation plan ..... NCCP

Natural Resources Conservation Service ..... NRCS

naturally occurring asbestos ..... NOA

Nitric oxide ..... NO

nitrogen dioxide ..... NO_2

nitrogen oxides ..... NOx

Northern California Power Agency ..... NCPA

Northwest Information Center ..... NWIC

Occupational Safety and Health Administration ..... OSHA

Office of Emergency Services ..... OES

Office of Planning and Research ..... OPR

sulfur dioxide ..... SO_2

operations and maintenance ..... O&M

Order WQ 2016-0068-DDW ..... General Order

ordinary high water ..... OHW

original Pipeline Maintenance Program ..... 2007 PMP

ozone ..... O_3

Pacific Gas and Electric Company ..... PG&E

Particulate matter with a diameter of 10 microns or less ..... PM_{10}

Silicon Valley Clean Energy ..... SVCE

peak particle velocity ..... PPV

Pest Control Advisor ..... PCA

Pipeline Maintenance Program ..... PMP or program

polychlorinated biphenyls ..... PCBs

Power and Water Resources Pooling Authority ..... PWRPA

ACRONYMS AND ABBREVIATIONS

programmable logic controllers ..... PLCs
Program Environmental Impact Report ..... PEIR
Public Resources Code ..... PRC
reactive organic gases ..... ROG
recycled water General Order ..... Order WQ 2016-0068-DDW
Registered Professional Archaeologist ..... RPA
remote-operated vehicle ..... ROV
remote terminal units ..... RTUs
Renewables Portfolio Standard ..... RPS
Resource Conservation and Recovery Act ..... RCRA
right-of-way ..... ROW
root-mean-square ..... RMS
Routine Maintenance Agreement ..... RMA
Sacred Lands File ..... SLF
Safer Affordable Fuel-Efficient ..... SAFE
San Benito County Conservation Plan ..... SBCCP
San Benito Regional Transportation Plan ..... RTP
San Joaquin Valley Air Basin ..... SJVAB
San Joaquin Valley Air Pollution Control District ..... SJVAPCD
San José–Santa Clara Regional Wastewater Facility ..... SJ-SC RWF
Santa Clara County Community Wildfire Protection Plan ..... CWPP
Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan ..... MJHMP
Santa Clara County Parks and Recreation Department ..... Santa Clara County Parks
Santa Clara Valley Habitat Plan ..... VHP
Santa Clara Valley Transportation Authority ..... VTA
Santa Clara Valley Urban Runoff Pollution Prevention Program ..... SCVURPPP
Santa Clara Valley Water District ..... Valley Water

ACRONYMS AND ABBREVIATIONS

San Francisco Bay Area Air Basin ..... SFBAAB

San Francisco Bay Regional Water Quality Control Board ..... RWQCB

San Francisco Public Utilities Commission ..... SFPUC

Seismic Hazards Mapping Act ..... SHMA

supervisory control and data acquisition ..... SCADA

Society of Vertebrate Paleontology ..... SVP

Soluble Threshold Limit Concentrations ..... STLCs

South County Recycled Water Project ..... SCRWP

South County Regional Wastewater Authority ..... SCRWA

Standardized Emergency Management Systems ..... SEMS

State Historic Preservation Office ..... SHPO

State Responsibility Area ..... SRA

State Route ..... SR

State Water Resources Control Board ..... SWRCB

State Water Resources Control Board ..... State Water Board

Stormwater Pollution Prevention Plan ..... SWPPP

Sustainable Communities Strategy ..... SCS

Sustainable Groundwater Management Act ..... SGMA

Total Maximum Daily Load ..... TMDL

Toxic Characteristic Leaching Procedures ..... TCLPs

Total Threshold Limit Concentrations ..... TTLCs

toxic air contaminant ..... TAC

Toxic Substances Control Act ..... TSCA

tribal cultural resources ..... TCRs

Underground Storage Tank ..... UST

University of California Museum of Paleontology ..... UCMP

U.S. Army Corps of Engineers ..... USACE

ACRONYMS AND ABBREVIATIONS

U.S. Department of Agriculture ..... USDA

U.S. Department of Transportation ..... USDOT

U.S. Environmental Protection Agency ..... EPA

U.S. Fish and Wildlife Service ..... USFWS

U.S. Geological Survey ..... USGS

U.S. Highway ..... US

Uniform Statewide Recycling Criteria ..... Uniform Recycling Criteria

Valley Transportation Plan ..... VTP

Vegetation Classification and Mapping Program's ..... VegCAMP's

vibration decibels ..... VdB

volatile organic compounds ..... VOCs

West Valley Sanitation District ..... WVSD

Wildland Urban Interface ..... WUI

Worker Protection Standards ..... WPS

ES-1 Executive Summary

ES-1.1 Introduction

Santa Clara Valley Water District (Valley Water) proposes to update its existing Pipeline Maintenance Program (PMP or program) and PMP Manual, which serves, and would continue to serve, as a planning and implementation document to maintain Valley Water's raw, potable, and recycled water pipelines and associated conveyance system facilities. The area covered by the updated PMP encompasses all of Valley Water's raw, treated, and recycled water conveyance pipeline systems and related facilities and appurtenances in Santa Clara County and limited portions of San Benito and Merced counties (Figure 1.2 1). This Draft Program Environmental Impact Report (PEIR) has been prepared to evaluate the potential environmental effects of implementing the proposed updates to the program.

The Draft PEIR has been prepared in compliance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before acting on those projects. The purpose of an EIR is "to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." (Public Resources Code [PRC] Section 21002.1(a).)

This PEIR evaluates the significant or potentially significant adverse effects on the physical environment resulting from the implementation of the program; describes feasible measures to mitigate any significant or potentially significant adverse effects; and considers alternatives that may lessen one or more of the significant or potentially significant adverse effects.

ES-1.1.1 California Environmental Quality Act Compliance

Valley Water is the lead agency under CEQA because it is the public agency proposing to approve and carry out the PMP. The California Department of Fish and Wildlife (CDFW), State Water Resources Control Board (SWRCB), and San Francisco Bay Regional Water Quality Control Board (RWQCB), are considered responsible agencies under CEQA because they have discretionary approval over some aspect of the program (see Section 1.4) and would likely rely on this document for their CEQA compliance.

As described in the CEQA Guidelines Section 15121(a), an EIR is a public information document that assesses potential environmental effects of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts.

ES-1.1.2 Pipeline Maintenance Program History, Overview, and Update

Valley Water conducts routine maintenance on its water conveyance systems in order to ensure the reliability and quality of water service. In September 2007, Valley Water initiated implementation of the original Pipeline Maintenance Program (2007 PMP or existing PMP), which was developed to prescribe processes and procedures for implementation of pipeline inspection, rehabilitation, and maintenance work. The 2007 PMP provided long-term guidance on implementation of the program and established processes for associated environmental documentation and permitting of covered activities.

Various changes have occurred since the 2007 PMP was finalized, including field procedures and environmental and regulatory conditions. Thus, Valley Water has determined that an updated PMP and accompanying updated PMP Manual is needed. This update brings Valley Water's documentation of pipeline inspection and rehabilitation practices to current regulations, standards, and procedures. Like the 2007 PMP Manual, the updated PMP Manual documents typical work activities and establishes a process for determining the level of environmental review required for maintenance activities.

ES-1.1.3 Overview of Valley Water's Water Conveyance System

Valley Water provides water resources management for Santa Clara County. Valley Water manages, owns, and operates a range of facilities, including dams, surface water reservoirs, water treatment plants, groundwater recharge facilities, jurisdictional streams, and conveyance systems. Valley Water's conveyance systems include pipelines and related appurtenances for distributing raw, treated, and recycled water.

The updated PMP covers inspection, maintenance, rehabilitation and/or repair of all existing conveyance systems (including pipelines and tunnels) for raw, treated, and recycled water that are owned and/or operated by Valley Water.

- Valves
- Release points
- Vaults
- Meters
- Electrical monitoring systems
- Generators
- Storage tanks
- Vegetation
- Access roads
- Erosion control
- Securing fencing and gates
- Land entitlement
- Pump Stations
- Surge Tanks
- Standpipes

ES-1.1.4 Program Area and Work Sites

The area covered by the updated PMP encompasses all of Valley Water's raw, treated, and recycled water conveyance pipeline systems and related facilities and appurtenances in Santa Clara County and limited portions of San Benito and Merced counties (Figure ES-1). Conveyance system components are within Valley Water fee-title properties, ROWs, or public utility easements, except for the Santa Clara Conduit and the Pacheco Conduit, which are on property easements that are owned by the U.S. Bureau of Reclamation. The updated PMP area also includes streams, fields, storm drains, and channels where releases of pipeline water can occur.

Program work sites encompass the areas surrounding pipelines and other associated infrastructure that is covered under the updated PMP (e.g., access roads, tanks, pump stations, turnouts), to be used to provide the necessary clearance to accommodate covered activities.

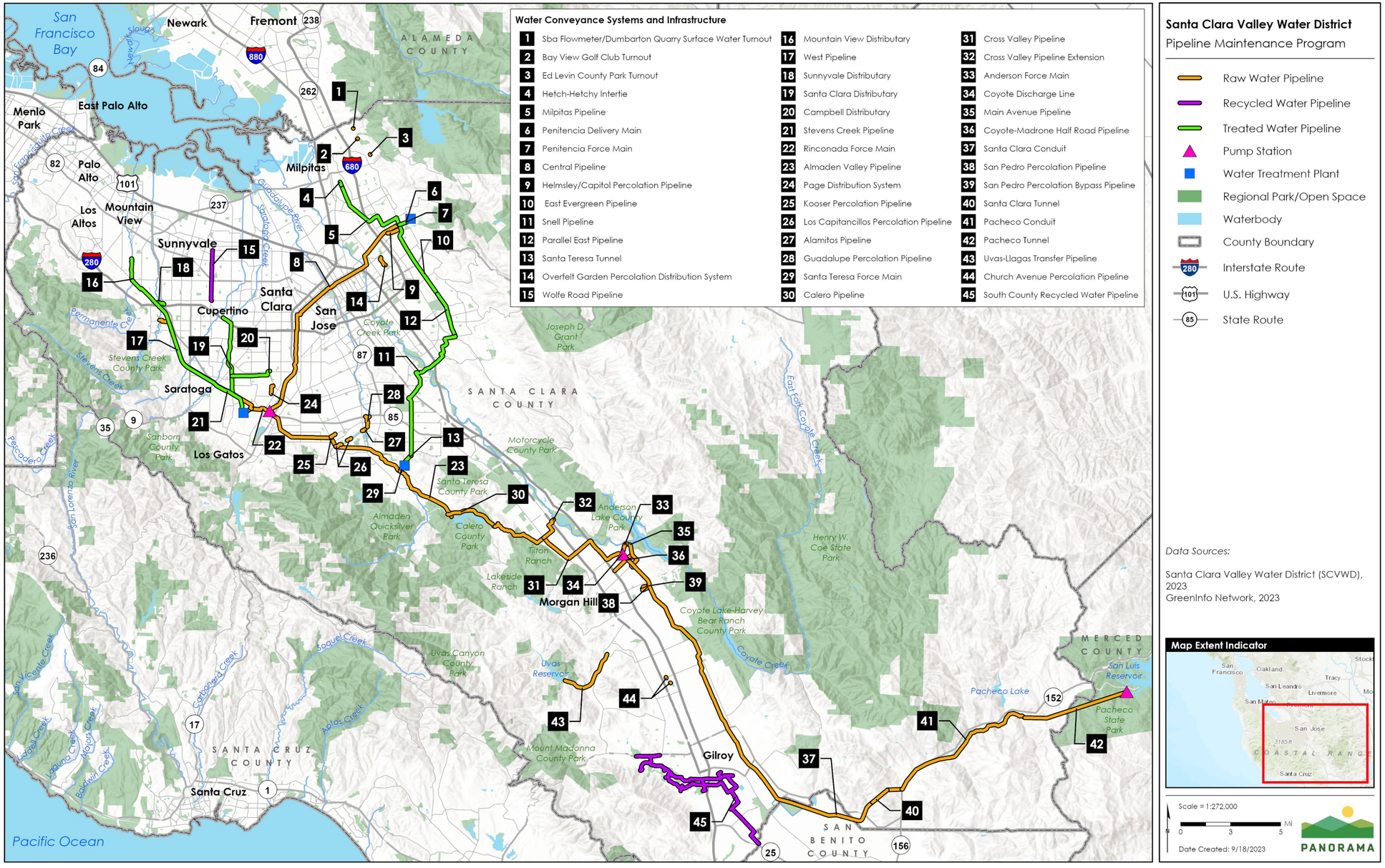
ES-1.2 Program Objectives

Consistent with the 2007 PMP, the updated PMP is needed to meet Valley Water's "Ends policies," further discussed below. PMP-covered activities and tasks are necessary to meet Valley Water's obligations to deliver safe and reliable service as a water purveyor. The purpose of the updated PMP is two-fold—to identify and guide the range of maintenance activities required to meet the pipeline conveyance system's operational needs, and to integrate these maintenance activities with the appropriate permitting and/or environmental review processes.

The objectives of the updated PMP are to:

1. Define standard practices and procedures for maintenance activities associated with Valley Water's conveyance systems.
2. Enhance operational flexibility and adaptive management opportunities for evaluating and improving the maintenance activities defined in the PMP through learned experiences and successive planning over time.
3. Streamline the environmental documentation and local, State, and federal permit processing where required to facilitate efficient and timely maintenance and repair of the pipeline system.

Figure ES-1: Program Area and Updated PMP System



The updated PMP Manual also serves as a policy guide for pipeline maintenance, in the context of Valley Water's overall guiding policies. Specifically, the updated PMP Manual supports Valley Water's implementation of the One Water Plan[1] (Valley Water 2022), the Water Supply Master Plan 2040 (SCVWD 2019), and the Asset Management Program, along with furthering Valley Water's mission, goals, and policies.

In support of its mission, Valley Water developed the Countywide Water Reuse Master Plan (CoRe Plan) (Brown and Caldwell 2021) and the One Water Plan approach as a 50-year roadmap for integrated water resource planning. The updated PMP is Valley Water's guide to addressing water conveyance reliability in its mission areas of water supply planning, flood protection, and ecosystem stewardship, in alignment with the One Water approach.

Valley Water's water supply planning efforts, such as the Water Supply Master Plan 2040 (Valley Water 2019), focus on identifying strategies that will provide a reliable and sustainable supply of water for Santa Clara County, with consideration of climate change, economic and regulatory uncertainties, environmental and social conflicts, and other risks. The updated PMP aligns with these strategies by guiding implementation of critical maintenance efforts for almost 150 miles of pipelines that bring water to replenish the local groundwater subbasins, supply Valley Water's drinking water treatment plants, supply agricultural users, and help meet environmental goals.

Droughts are identified in the Water Supply Master Plan 2040 as the greatest challenge to water supply reliability. Santa Clara County faces water supply challenges that are driven by reoccurring droughts, growth in population and businesses, and variabilities of imported water. The updated PMP Manual expands on the 2007 PMP Manual, to include maintenance of Valley Water's recycled water systems, which will allow greater efficiency in completing projects.

Furthermore, the updated PMP builds on Valley Water's Ends policies and other policies set by the Board of Directors, intended to guide its Board-appointed officers in accomplishing its overall mission (Valley Water, n.d.).

ES-1.3 Updated PMP Manual Overview

The updated PMP Manual, like its predecessor, the 2007 PMP Manual, is a process and procedural document that provides long-term guidance for implementation of pipeline inspection, rehabilitation, and maintenance work and associated environmental documentation and permitting for this work. The Draft Updated PMP Manual, provided in Appendix A, is intended to guide implementation of pipeline inspections and corrective and preventative

[1] The One Water Plan establishes a vision, goals, objectives, and strategies to manage Santa Clara County water resources. The One Water approach includes a focus on achieving multiple benefits, approaching decisions with a systems mindset, and using watershed-scale thinking to manage water resources.

maintenance activities to improve Valley Water pipeline O&M. Specific measures, protocols, and reporting requirements are identified in the updated PMP Manual so that all pipeline inspections and maintenance activities will be implemented in an efficient and environmentally sensitive manner. Valley Water performs the same set of pipeline maintenance activities repeatedly throughout its system, although not necessarily on each pipeline each year. Specific maintenance activities on specific pipelines are expected to vary from year to year but have a consistent overall pattern in terms of work completed. If routine maintenance practices are changed substantially at any time, the updated PMP and PEIR will be reviewed and may be updated as needed.

ES-1.4 Description of the Proposed Project

ES-1.4.1 Activities Covered Under the Updated PMP Manual

Two categories of maintenance activities—inspection activities and facility maintenance activities—are necessary to maintain proper pipeline facility and appurtenance function. Sub-activities that fall within these categories are included in Table ES-1 and as follows:

- Inspection Activities
  - External inspections
  - Internal inspections
- Facility Maintenance Activities
  - Buried and exposed pipeline component maintenance, including pipeline sections, valves, and fittings
  - Tunnel maintenance
  - Manhole, meter, vault, and related appurtenance maintenance
  - System instrumentation, controls, and monitoring
  - Backup generator maintenance
  - Pump station and facility maintenance
  - Storage tank and facility maintenance
  - Surge tanks & standpipes maintenance
  - Access road and support structure maintenance
  - Bank stabilization, erosion control, and energy dissipation device maintenance
  - Vegetation management

Each of these inspection or maintenance activities would be completed through multiple tasks (i.e., by individual steps in completing the activity). The activities and tasks descriptions have been updated to reflect current Valley Water practices; however, additions or changes may arise over the life of the updated PMP (such as implementation of new techniques or technologies). Activities may not be described explicitly in the updated PMP Manual, but they are intended to be covered by the updated PMP as long as they generally are consistent with the covered activities and would not result in new significant environmental effects.

Table ES-1: Updated PMP Activities and Tasks Matrix

	General Tasks			Pipeline Draining Tasks			Maintenance and Repair Tasks		
	Setup, staging, and access	Control of hazardous energy (Lock-out/tag-out)	Pump-out of vaults/ manholes	Isolation	Dewatering	Refilling	Excavation, backfill, construction, and other ground disturbance	Repair of pipeline system infrastructure	Non-ground-disturbing repair
Inspection Activities									
External inspections (non-ground-disturbing)[a]	x								
External inspections (ground-disturbing)	x	x	x	x	x		x		
Internal inspections	x	x	x	x	x				
Facility Maintenance Activities									
Buried and exposed pipeline component maintenance, including pipeline sections, valves, and fittings	x	x	x	x	x	x	x	x	
Tunnel maintenance	x		x	x	x	x	x	x	
Manhole, meter, vault, and related appurtenance maintenance	x	x	x	x	x	x	x	x	x
System instrumentation, controls, and monitoring maintenance	x	x	x	x			x		x
Backup generator maintenance	x	x					x	x	x
Pump station and facility maintenance	x	x	x	x	x	x	x	x	x
Storage tanks and facility maintenance	x	x	x	x	x	x	x	x	x
Surge tank maintenance	x	x	x	x	x	x	x	x	x
Access road and support structure maintenance	x	x	x	x	x	x	x		x
Bank stabilization, erosion control, and energy dissipation device maintenance	x				x		x		
Vegetation management	x				x		x		x

[a] Non-ground-disturbing external inspection tasks would typically be limited to access.

ES-1.4.2 Inspection Activities

Inspections would be needed to verify the operability of the pipelines or their associated facilities, and in many cases to determine what type of maintenance may be needed, based on conditions observed during the inspection. These inspections could be either external or internal (on the surface or outside a pipeline or facility, or inside a pipeline or other facility). Similar to the existing PMP, the vast majority of work implemented under the updated PMP would involve minor day-to-day routine inspection (non-ground-disturbing external inspections and internal inspections) activities.

External Inspections

External inspections would involve physically examining the outside of a pipeline component. External inspections would include two types of external inspections—non-ground-disturbing and ground-disturbing external inspections.

Non-Ground-Disturbing External Inspections

The vast majority of external inspections would be non-ground-disturbing external inspections, which would be conducted on a regularly scheduled basis to inspect exposed or aboveground pipeline infrastructure (e.g., exposed pipeline segments, aboveground appurtenances such as valves).

Ground-Disturbing External Inspections

Ground-disturbing external inspections (e.g., potholing/geotechnical studies, exposure of buried pipelines or infrastructure) would be required to inspect underground pipeline infrastructure and surrounding soils. \

Internal Inspections

Internal inspections would be necessary to check the integrity of all internal parts and appurtenances of a pipeline and could be done by manned inspection or using disinfected special equipment, such as remote-controlled or hand-fed, closed-circuit television (CCTV) camera probes. Other types of internal inspections could include magnetic flux and electromagnetic inspections.

ES-1.4.3 Facility Maintenance Activities

Age, wear, corrosion, leaks, and integrity loss from seismic activity and other natural geologic processes all contribute to degradation of the systems over time. Preventative and corrective maintenance are required for adequate system functionality and safe, reliable water delivery. Several different maintenance activities would need to be performed at the facilities, both on a defined schedule as preventative maintenance and on an as-needed basis as corrective maintenance. Some of these activities would be minor, while others could be larger undertakings that, while requiring a more robust internal design and approval effort, still would be considered maintenance, and thus would be covered under the updated PMP.

Buried and Exposed Pipeline Component Maintenance, Including Pipeline Sections, Valves, and Fittings

Maintenance of pipelines and their direct appurtenances is critical for reducing water loss, maintaining safe operations, and ensuring pipeline integrity. This includes regular maintenance of valves, fittings, pumps, motors, and other mechanical components. However, new appurtenances that would expand the system capacity would not be covered under the updated PMP. Various pipeline maintenance activities may be performed, such as interior lining repair, joint repair, slip lining repair, and pipeline section replacement, using trenchless methods, open-pit excavation, or within the pipeline. Cathodic protection systems also may be installed during pipeline maintenance activities, for long-term pipeline protection.

Tunnel Maintenance

Appurtenances or monitoring equipment may be placed or replaced within the tunnels. Tunnel relining and/or extensive tunnel liner repair and/or replacement would be covered under the updated PMP. The replacement or installation of new tunnels would be a major action, requiring a separate environmental evaluation, and this would not be an activity included in the updated PMP.

Manhole, Meter, Vault, and Related Appurtenance Maintenance

This maintenance activity would cover structures that provide access to pipeline components, including manholes, vaults, and meter pits. These structures could be aboveground or belowground and house pipeline appurtenances such as valves, meters, and monitoring equipment. Aboveground features, such as pipeline markers, standpipes, and equipment boxes/covers, also would be maintained with minimal ground disturbance under the updated PMP.

System Instrumentation, Controls, and Monitoring Maintenance

Monitoring equipment or wires may be buried, inside pipelines, vaults, or manholes, or at pole-mounted lock boxes. The operation of these systems would rely on maintaining a communication infrastructure network that could include wireless and wired electrical components. Maintenance would include repair and replacement of field instrumentation and their enclosures, such as sensors, monitors, and field controllers, remote terminal units (RTUs), and programmable logic controllers (PLCs). The RTUs and PLCs would collect, and compile data supplied by field instrumentation.

Backup Generator Maintenance

Maintenance of existing generators and associated facilities would be covered under the updated PMP. Generators would improve O&M by providing critical backup power for pumps and other vital electrical equipment. Installation of up to 20 new generators, which may also require a new concrete pad, would also be an updated PMP-covered activity, because this would not expand system capacity. As with existing generators, the new permanent backup generators would be installed within sound-attenuating enclosures to meet local noise ordinances.

Pump Stations and Facility Maintenance

The pump station facilities would require maintenance to verify protection of the housed components. This would include the physical walls, entryways, ceilings, and foundations. Pump replacement would be an updated PMP-covered activity if it would not expand conveyance system capacity. Other components such as adjustable speed drives (ASDs), which typically are on the interior of pump station buildings and commonly are replaced at the time of pump replacement.

Storage Tanks and Facility Maintenance

Maintenance of storage tanks would include replacing appurtenances such as locks, ladders, hatchways, pressure gauges, telemetry, vents, overflows, mixing devices, baffles, flushing, and internal cleaning. Methods for cleaning may require draining the tank for entry; however, some tanks may accommodate submerged entry. Repairs also could include external tank painting or internal tank and concrete foundation repair.

The above-mentioned water tank appurtenances may require replacement; however, the water tank itself also may need to be replaced. Water tank replacement would be a covered activity if this would not expand conveyance system capacity. Water storage tank materials and technologies may be upgraded if system capacity remains consistent.

Surge Tank Maintenance

Surge tanks have various components that may need repair or replacement, including the pressure gauge, pump, switches, and connectors. Maintenance could include repair, replacement, or installation of a new surge tank. Installation of a surge tank would not expand conveyance system capacity, and thus would be covered under the updated PMP.

Access Road and Support Structure Maintenance

Valley Water maintains various access roads and small structures that support water conveyance system pipelines. Road repair could involve grading, paving, and trucking in gravel as well as restabilizing access roads to vaults. Fencing, gates, and security structures associated with access roads and areas surrounding water system infrastructure also may need maintenance for increased security or public safety. This maintenance could include increasing fence heights or installing cameras and/or alarm systems. Systems such as French drains, or other green infrastructure providing similar benefits, may be installed to reduce ponding and runoff erosion.

Bank Stabilization, Erosion Control, and Energy Dissipation Device Maintenance

Bank stabilization and erosion control devices would be installed along access roads, near dewatering points, along stream embankments, and other features subject to runoff and erosion. Maintenance of energy dissipaters or hardened embankments may be required to prevent erosion. In addition to maintenance of those features, they also could be removed or decommissioned. Erosion and/or scour issues could occur along pipeline sections because of deteriorating upland and stream conditions.

Vegetation Management

Year-round, Valley Water conducts various vegetative maintenance activities to maintain its facilities, access points, and water sources. Vegetative maintenance increases worker and public safety as well as wildfire prevention. Vegetation maintenance also decreases habitat for dangerous vectors, such as spiders, snakes, and ticks, thereby increasing worker safety. This activity is vital to reduce fire fuels.

ES-1.4.4 Minimization of Project Impacts

Best Management Practices

In 2014, Valley Water developed its Best Management Practices Handbook (included as Appendix C), which contains a comprehensive list of standardized BMPs intended to be incorporated into Valley Water's CEQA documents to avoid or minimize project impacts (Valley Water 2014). BMPs from the Best Management Practices Handbook specifically applicable to the updated PMP are incorporated into the updated PMP Manual by reference and are considered part of the proposed program. The BMPs relevant to the updated PMP are provided Table 2-3 in Section 2.7.3, Best Management Practices.

PMP-Specific Avoidance and Minimization Measures

Because the BMPs from Valley Water's Best Management Practices Handbook are standardized and intended to apply to a broad range of projects and activities, Valley Water has tailored several of the standardized BMPs to apply more directly to PMP-related activities or tasks. To differentiate them from BMPs, these modified measures are identified as program-specific AMMs; however, similar to BMPs, AMMs would be implemented as part of the program (and are not considered mitigation). The updated PMP Manual (Appendix A) includes these AMMs, which are also provided in Table 2.-4, Section 2.7.4, Program-Specific Avoidance and Minimization Measures.

Applicable Valley Habitat Plan Conditions

The Valley Habitat Plan (VHP) includes pipeline maintenance activities proposed as part of the updated PMP as VHP-covered activities. As a VHP permittee, Valley Water is required to implement VHP conditions as part of the program, and VHP conditions therefore are not considered CEQA mitigation measures. The VHP conditions relevant to the updated PMP are provided Table 2-5, Section 2.7.5, Applicable VHP Conditions. Additional details regarding VHP conditions are provided in Section 3.3, Biological Resources. VHP Conditions 3, 4, and 5 require compliance with a suite of VHP-prescribed avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided in Table 2 6, Section 2.7.5 Applicable VHP Conditions.

ES-1.5 Alternatives Evaluated in the Draft PEIR

ES-1.5.1 Overview

This section discusses alternatives that passed the screening process and have been retained for analysis in the PEIR. These include the No Project Alternative, as required by CEQA, and a "Less Frequent Inspection and Maintenance Alternative." The Less Frequent Inspection and Maintenance Alternative would substantially meet most of the program objectives, would be potentially feasible, and would generally reduce some significant environmental effects of the proposed PMP update.

ES-1.5.2 No Project Alternative

Under the No Project Alternative, Valley Water would not update the existing PMP or the PMP Manual and would continue to conduct maintenance activities under the 2007 PMP Manual and 2007 PMP EIR. The No Project Alternative, such activities would continue to undergo individual CEQA review and would be evaluated on a case-by-case basis. These activities would still be performed in a similar manner as described for the proposed PMP update, with the main difference being the planning and review process prior to conducting activities. Therefore, under the No Project Alternative, the effects identified in individual activity reviews would be similar to the updated PMP, because the physical activities being undertaken would be the same.

The No Project Alternative would have the same impact as the updated PMP because the physical activities completed would be the same. The No Project Alternative would not avoid or reduce the significant and unavoidable impacts associated with noise from the proposed PMP update. Other impacts related to ground disturbance or water releases would also not be reduced under the No Project Alternative.

The No Project Alternative would not meet the objectives of the proposed PMP update as the PMP Manual would not be brought up to date to define current standard practices, operational flexibility and adaptive management would not be enhanced as compared to existing practices, and future environmental documentation and permitting would not be streamlined by including the full range of PMP activities.

ES-1.5.3 Less Frequent Inspection and Maintenance Alternative

Maintenance on pipelines is completed as either preventative or corrective maintenance. Under both the existing and updated PMP, pipelines are and would continue to be inspected every 5 years. The Less Frequent Inspection and Maintenance Alternative would modify the frequency of the preventative maintenance schedule to every 20 years.

The Less Frequent Inspection and Maintenance Alternative provides a temporary reduction in potential impacts on hydrology and water quality and sensitive wildlife and plant species due to a decrease in the frequency of maintenance tasks associated ground disturbance. A decrease in maintenance frequency would temporarily reduce impacts on transportation and emergency

response services with a reduction in potential street closures. Less construction equipment activity would temporarily reduce impacts on air quality and greenhouse gas due to reduced emissions. Temporarily, significant impacts due to noise would be less frequent as there would not be maintenance activities requiring noise generating equipment as often.

Any reduction in impacts would be temporary as deferred pipeline maintenance would cause an increase in risk of pipeline failure and emergency maintenance. Deferring maintenance would cause projects to be larger and more complex in nature, thus increasing the magnitude of environmental impacts in the long term. Additionally, there would be an increase in emergency repair, straining available Valley Water resources, which would impact staff availability for environmental reviews and inspections even at the delayed 20-year cycle. Emergency projects would result in greater environmental impacts as the emergency projects are not required to implement BMPs, program-specific avoidance and minimization measures (AMMs), or mitigation measures.

ES-1.6 Comparison of Proposed Project and Alternative Impacts

Table ES-2 summarizes impacts of the alternatives and compares Proposed Project impacts with the impacts of each of the alternatives evaluated in the EIR. Main categories of impacts include:

- no impact (NI)
- less than significant impact (LTS)
- significant but mitigable impact (S/M); impacts would be less than significant with mitigation
- significant and unavoidable impact (S/U); no feasible mitigation measures are available to reduce impacts to less than significant level
- beneficial impact

Table ES-2: Comparison of Alternatives

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Aesthetics-1: Have a substantial adverse effect on a scenic vista, substantially degrade the existing visual character or quality of public views in nonurbanized areas, or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact on scenic vistas would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on scenic vistas would remain less than significant.
Impact Aesthetics-2: In urbanized areas, conflict with applicable zoning or other regulations governing scenic quality.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact on visual character and scenic quality would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on visual character and scenic quality would remain less than significant.
Impact Aesthetics-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	LSM	LSM	S/U	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts from light or glare would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures and mitigation would not be required and impacts from light or glare could increase to significant and unavoidable.
Impact Agriculture and Forestry-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on farmland would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on farmland would remain less than significant.
Impact Agriculture and Forestry-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on agricultural uses and Williamson Act lands would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on agricultural land uses and Williamson Act lands would remain less than significant.
Impact Agriculture and Forestry-3: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact due to conversion of farmland would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar as the proposed PMP update, the impact due to conversion of farmland would remain less than significant.
Impact Air Quality-1: Conflict with or obstruct implementation of the applicable air quality plan.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact related to emissions conflicting with or obstructing implementation of the air quality plan would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, the impact related to emissions conflicting with or obstructing implementation of the air quality plan would remain less than significant.

[2] NI = no impact; LTS = less than significant impact; LSM = less than significant with mitigation measures identified in this EIR, SU = significant and unavoidable.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent nspection and Maintenance		
Impact Air Quality-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the program region is non-attainment under an applicable federal or state ambient air quality standard.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, criteria pollutant emissions would not change, and the impact would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, criteria pollutant emissions would be similar, and the impact would remain less than significant.
Impact Air Quality-3: Expose sensitive receptors to substantial pollutant concentrations.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, there would be no change in the exposure of sensitive receptors to pollutant concentrations, and the impact would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, the exposure of sensitive receptors to pollutant concentrations would be similar, and the impact would remain less than significant.
Impact Air Quality-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, odor-generating impacts would not change and the impact would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, there would be no change in the exposure of sensitive receptors to pollutant concentrations, odor-generating impacts would be similar and the impact would remain less than significant.
Impact Biological Resources-1: 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.	LSM	LSM	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on special-status species would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for the emergency projects and impacts special-status species could increase to significant and unavoidable.
Impact Biological Resources-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.	LSM	LSM	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on riparian habitat or other sensitive natural communities would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts on riparian habitat or other sensitive natural communities could increase to significant and unavoidable.
Impact Biological Resources-3: 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.	LSM	LSM	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on wetlands would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts on wetlands could increase to significant and unavoidable.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and		
Impact Biological Resources-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	LTS	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on wildlife movement or nursery sites would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts on wildlife movement or nursery sites could increase to significant and unavoidable.
Impact Biological Resources-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	LTS	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflicting with local policies or ordinances protecting biological resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA and other local policies and ordinances. Mitigation measures would not be required and impacts related to conflicting with local policies or ordinances protecting biological resources could increase to significant and unavoidable.
Impact Biological Resources-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	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflict with the VHP or other conservation plans would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA and other habitat or conservation plans. Mitigation measures would not be required and impacts related to conflict with the VHP or other conservation plans could increase to significant and unavoidable.
Impact Cultural Resources-1: Result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines.	LSM	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on historical resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts on historical resources could increase to significant and unavoidable.
Impact Cultural Resources-2: Result in a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines or disturb any human remains, including those interred outside of dedicated cemeteries.	LSM	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on unique archaeological resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts related to disturbing human remains could increase to significant and unavoidable.
Impact Energy-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during program construction or operation.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, energy use would be the same and impacts would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, energy use would be the similar and impacts would remain less than significant.
Impact Energy-2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to State or local plans for renewable energy or energy efficiency would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, impacts related to State or local plans for renewable energy or energy efficiency would remain less than significant.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Geology and Soils-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault; Strong seismic ground shaking; Seismic-related ground failure, including liquefaction; Landslides.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to seismic events would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, impacts related to seismic events would remain less than significant.
Impact Geology and Soils -2: Result in substantial soil erosion or the loss of topsoil.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on soil erosion or loss of topsoil would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts on soil erosion or loss of topsoil could increase to significant and unavoidable.
Impact Geology and Soils -3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the program, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts due to on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, impacts due to on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse would remain less than significant.
Impact Geology and Soils -4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property..	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, risks to life or property as a result of expansive soil would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, risks to life or property as a result of expansive soil would remain less than significant.
Impact Geology and Soils -5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	NI	NI	NI	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, no septic tanks or alternative wastewater systems would be constructed and there would be no impact.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, no septic tanks or alternative wastewater systems would be constructed and there would be no impact.
Impact Geology and Soils -6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on paleontological resources and unique geologic features would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts on paleontological resources and unique geologic features could increase to significant and unavoidable.
Impact Greenhouse Gas-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, GHG emissions would be the same, and the impact would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, GHG emissions would be similar, and the impact would remain less than significant.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Greenhouse Gas -2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, consistency with plans, policies, and regulations adopted for the purpose of reducing GHG emissions would be the same as the program, and the impact would remain less than significant.	Although maintenance activities completed under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA and GHG plans, policies, and regulations. The physical activities of the Alternative and emergency projects would be similar to the proposed PMP update and therefore GHG emissions would also be similar and the impact would remain less than significant.
Impact Hazards and Hazardous Materials -1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to the routine transport, use, or disposal of hazardous materials would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, risks to life or property as a result of expansive soil would remain less than significant.
Impact Hazards and Hazardous Materials -2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LSM	LSM	SU	Because the physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to upset and accident conditions involving the release of hazardous materials into the environment would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to upset and accident conditions involving the release of hazardous materials into the environment from the emergency projects could increase to significant and unavoidable.
Impact Hazards and Hazardous Materials -3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to emission or use of hazardous materials, substances, or waste within 0.25 mile of a school would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for the emergency projects; however due to the low frequency and likelihood of activities within 0.25 miles of a school the impacts related to emission or use of hazardous materials, substances, or waste within 0.25 mile of a school would remain less than significant.
Impact Hazards and Hazardous Materials -4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to locations on a list of hazardous material sites would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur at a reduced frequency, but in the same location at he proposed PMP update, and impacts would remain less than significant.
Impact Hazards and Hazardous Materials -5: For program pipelines located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would result in a safety hazard or excessive noise for people residing or working in the program area.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to creating a safety hazard or excessive noise for people residing or working in the project area would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur in the same areas as the proposed PMP update. The impacts would remain less than significant.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Hazards and Hazardous Materials -6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impacts on impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts on impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan from the emergency projects could increase to significant and unavoidable.
Impact Hazards and Hazardous Materials -7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts of exposure to significant risk of less, injury, or death involving wildland fires would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts of exposure to significant risk of less, injury, or death involving wildland fires from the emergency projects could increase to significant and unavoidable.
Impact Hydrology and Water Quality-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to violation of water quality standards or discharge requirements would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to violation of water quality standards or discharge requirements could increase to significant and unavoidable.
Impact Hydrology and Water Quality-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the program may impede sustainable groundwater management of the basin.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on groundwater supplies, recharge, and sustainable groundwater management of the basin would remain insert	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the program, impacts on groundwater supplies, recharge, and sustainable groundwater management of the basin remain less than significant.
Impact Hydrology and Water Quality-3: 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 that would: (1) result in substantial erosion or siltation on- or off-site, (2) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off-site, (3) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff, or (4) impede or redirect flood flows.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to altering drainage patterns would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to altering drainage patterns, flooding, or stormwater system capacity exceedances could increase to significant and unavoidable.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Hydrology and Water Quality-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, risk of pollutant release due to project inundation would remain less than significant	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, impacts related to project inundation would remain less than significant.
Impact Hydrology and Water Quality-5: Conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to obstructing implementation of a water quality control plan or sustainable groundwater management plan would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to related to obstructing implementation of a water quality control plan or sustainable groundwater management plan from the emergency projects could increase to significant and unavoidable.
Impact Land Use and Planning-1: Physically divide an established community.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to physically dividing an established community would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, impacts related to physically dividing an established community would remain less than significant.
Impact Land Use and Planning-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts due to conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, but at a reduced frequency. Impacts would remain less than significant.
Impact Noise-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	SU	SU	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, substantial temporary noise increases would have the potential to occur, and the impact would remain significant and unavoidable.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update and would have a temporary reduction in the frequency of maintenance activities in noise. However, due to reduced maintenance, the likelihood of emergency activities or larger projects would increase. Mitigation measures would not be required for emergency projects, substantial temporary noise increases from emergency activities would have the potential to occur, and applicable noise thresholds for nighttime and weekend work may still be exceeded. The resulting impact from emergency maintenance would remain significant and unavoidable.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Noise-2: Generate excessive groundborne vibration or groundborne noise levels.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact related to excessive groundborne vibration or groundborne noise levels would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts related to related to excessive groundborne vibration or groundborne noise levels from emergency projects could increase to significant and unavoidable.
Impact Noise-3: For program work sites in the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the program area to excessive noise levels.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact related to exposing people residing or working in the program area to excessive noise levels in the vicinity of a public or private airport would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, impacts related to exposing people residing or working in the program area to excessive noise levels in the vicinity of a public or private airport would remain less than significant.
Impact Public Services-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for public services including fire protection, police protection, schools, parks, and other public facilities.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impacts related to provision of new or physically altered governmental facilities or emergency service response would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to emergency service response from road closures could increase to significant and unavoidable.
Impact Recreation-1: The PMP would increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impacts associated with physical deterioration of recreational facilities or construction or expansion of recreational facilities would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for the emergency projects and impacts related to recreational use and access of existing facilities could increase to significant and unavoidable.
Impact Recreation-2: The PMP would not include recreational facilities, nor would it require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	NI	NI	NI	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, no recreational facilities would be constructed or expanded and there would be no impact.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, no recreational facilities would be constructed or expanded and there would be no impact.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Transportation-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflict with program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures and compliance with plans, policies and ordinances may also not be implemented or required. Impacts related to conflict with program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities from the emergency projects could increase to significant and unavoidable.
Impact Transportation-2: Conflict or be inconsistent with Section 15064.3(b) of the State CEQA Guidelines.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflict with Section 15064.3 subdivision (b) of the State CEQA Guidelines would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The impacts from conflict with Section 15064.3 subdivision (b) of the State CEQA Guidelines would be slightly less than the proposed PMP update due to reduced vehicle travel and the impact would remain less than significant.
Impact Transportation-3: Substantially increase hazards related to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to hazards related to geometric design features or incompatible uses would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to hazards related to geometric design features or incompatible uses (such as temporary road closure) from the emergency maintenance could increase to significant and unavoidable.
Impact Transportation-4: Result in inadequate emergency access.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on emergency access would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts on emergency access due to emergency activities could increase to significant and unavoidable.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Tribal Cultural Resources-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: (i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or (ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the program, impacts on tribal cultural resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts on tribal cultural resources from emergency projects could increase to significant and unavoidable.
Impact Wildfire-1: Substantially impair an adopted emergency response plan or emergency evacuation plan.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the program, the impact related to impairing an adopted emergency response plan or emergency evacuation plan would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts impairing an adopted emergency response plan or emergency evacuation plan from the emergency maintenance activities could increase to significant and unavoidable.
Impact Wildfire-2: Exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the program, the impact related to exacerbating wildfire risks would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to exacerbating wildfire risks from emergency maintenance activities could increase to significant and unavoidable.
Impact Wildfire-3: 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.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the program, impacts related to installation of infrastructure that may exacerbate wildfire risk would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to installation of infrastructure that may exacerbate wildfire risk from emergency maintenance projects could increase to significant and unavoidable.

Impact Statement	Significance[2]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Wildfire-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.	LST	LST	SU	Physical activities completed under the No Project Alternative would be the same as the program, impacts related to exposing people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of run-off, post-fire slope instability, or drainage changes would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to exposing people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of run-off, post-fire slope instability, or drainage changes from emergency maintenance projects could increase to significant and unavoidable.

ES-1.7 Significant and Unavoidable Impacts

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss significant effects, including those that can be mitigated but not reduced to a level of insignificance. For this analysis, the following significant and unavoidable impact would occur as a result of the proposed PMP update.

Noise

- **Impact NOI-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.** As further discussed in Section 3.11, Noise, even with the implementation of MM NOI-1 (Construction Noise Notification) and MM NOI-2 (Nighttime/Weekend Noise Control and Notification), it may be necessary to carry out construction during times prohibited by local noise ordinance. Therefore, Impact NOI-1 remains significant and unavoidable.

ES-1.8 Cumulative Impacts

Cumulative impacts are two or more individual effects which, when considered together, are considerable or compound or increase other environmental impacts (CEQA Guidelines Section 15355). The individual effects can be changes resulting from a single project or a number of separate projects. The cumulative effect from several projects is the change in the environment that results from the incremental impact of the project when added to other reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Two methods can be used for cumulative impact analysis (CEQA Guidelines Section 15130). In the list approach, the lead agency identifies related projects or activities that could add to the proposed project's environmental impacts. In the projection, or plan, approach, the lead agency relies on projections in an adopted planning document (for example, a General Plan EIR) or prior environmental document. This PEIR uses the plan approach given the long duration of the PMP (15 years or longer) and the large geographic area covered PMP.

A conclusion of cumulative impact significance was made, and the incremental contribution of the Proposed Project or alternative was then judged for whether it was cumulatively considerable (CC) or not cumulatively considerable (NCC). If cumulatively considerable, feasible mitigation measures to reduce the incremental contributions were considered; these are the same as described in Chapters 3 and 4.

Resources resulting in cumulatively considerable impacts post-mitigation, if applicable, include:

Noise

- **Impact NOI-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.** As further discussed in Section 3.11, Noise, even with the implementation of MM NOI-1 (Construction Noise Notification) and MM NOI-2 (Nighttime/Weekend Noise Control and Notification), it may be necessary to carry out construction during times prohibited by local noise ordinance. Therefore, Impact NOI-1 remains significant and unavoidable.

Resources resulting in no cumulatively considerable impacts include hydrology and water quality, hazards and hazardous materials, air quality, greenhouse gas emissions, energy, aesthetics, wildfire, utilities, recreation, public services, agriculture and forestry.

Resources resulting in not cumulatively considerable with mitigation measures include geology and soils, biological resources, cultural resources, tribal cultural resources.

ES-1.9 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires the identification of an environmentally superior alternative to the proposed project. As noted in the alternative descriptions, the No Project Alternative is environmentally superior to the Less Frequent Inspection and Maintenance Alternative because the No Project Alternative would allow for continued maintenance of PMP facilities and reduced likelihood of major maintenance activities and emergency repair/maintenance being required. The No Project Alternative would implement the 2007 PMP, which could provide a lesser degree of environmental protection than the proposed PMP update due to outdated BMPs and mitigation measures, but would provide greater environmental protection than the increased emergency activity that would be expected with the Less Frequent Inspection and Maintenance Alternative. While the No Project Alternative is the environmentally superior alternative, the proposed PMP update would have fewer environmental impacts than the No Project Alternative since the proposed PMP update includes updated environmental protection measures. The proposed PMP update achieves all of the program objectives, including adaptive management which enables Valley Water to adjust inspection and maintenance based on learned experiences to continue to operate in the most environmentally friendly manner possible.

ES-1.10 Areas of Known Controversy

CEQA Guidelines Section 15123(b) states that an EIR must identify areas of known controversy that might have been raised by other agencies, the public, or other stakeholders. No areas of controversy related to the program or EIR were identified during the EIR scoping process.

ES-1.11 Public Involvement Process

ES-1.11.1 California Environmental Quality Act Scoping Process

Scoping refers to the public outreach process used in CEQA processes to solicit feedback on the scope of an EIR and the initial CEQA planning process. The scoping comment period offers an important opportunity for public review and comment in the early phases of a project. The scoping process for an EIR is initiated by publication of the Notice of Preparation (NOP) to provide formal notice to the public and to interested agencies and organizations that the lead agency is preparing a draft EIR. The purpose of the NOP is to notify the public, responsible agencies, and trustee agencies of the intent to prepare an EIR and to solicit feedback as to the scope and content of the environmental information to be included in the environmental review (CEQA Guidelines Section 15375). During the scoping period, agencies and the public are invited to comment on the project, the approach to environmental analysis, and any issues of concern. A copy of the NOP is provided in Appendix B.

Notice of Preparation Comments

Valley Water circulated the NOP from October 17 through November 22, 2023. The NOP identified Valley Water as the lead agency for the program and was circulated to the public; the Governor's Office of Planning and Research; responsible, trustee, and other relevant local, state, and federal agencies; and other interested parties and members of the public. Valley Water published the NOP in the San Jose Mercury News, Merced Sun-Star, and the Hollister Free Lance on October 27, 2023. The State Clearinghouse Number for the Program is 2023100671.

Valley Water received four comment letters in response to the NOP from the following organizations:

- California Department of Transportation, dated November 22, 2023
- CDFW, dated November 29, 2023
- National Historic Preservation Act (NAHC), dated October 24, 2023
- Santa Clara County Parks and Recreation Department, dated November 21, 2023

Public Scoping Meeting

To provide an opportunity for additional public input on the scope and content to be addressed in the EIR, Valley Water held a public scoping meeting via webinar on November 2, 2023, from 2:30 to 4 p.m. During the scoping meeting, a slide presentation was displayed. Throughout the scoping meeting, discussions with meeting attendees were documented. No public comments were received at the scoping meeting.

Tribal Consultation

Assembly Bill (AB) 52, passed in 2014, requires formal consultation with Native American tribes during the CEQA process for projects that have an NOP filed on or after July 1, 2015. Notification letters regarding the PMP were mailed to all 37 tribal representatives on September 20, 2023. One tribe, the Tuolumne Band of Me-Wuk Indians, responded to clarify that the

project area is outside of the tribe's ancestral area. No other tribal responses were received within the allotted timeframe or thereafter.

Draft EIR Public Comment Period

Valley Water has issued a Notice of Availability to provide agencies and the public with formal notification that the Draft EIR is available for review and comment. Copies of the Draft EIR and selected appendices are available at the following website:

www.valleywater.org/project-updates/pipeline-maintenance-program

The Draft EIR and all appendices are available in an electronic version on external storage devices at the following locations:

- Valley Water, 5750 Almaden Expressway, San José, CA 95118
- Los Gatos Library, 100 Villa Avenue, Los Gatos, CA 95030
- Cupertino Library, 10800 Torre Avenue, Cupertino, CA 95014
- Milpitas Library, 60 North Main Street, Milpitas, CA 95035
- Morgan Hill Library, 660 West Main Avenue, Morgan Hill, CA 95037
- Gilroy Library, 350 West 6th Street, Gilroy, CA 95020

Hard copies of the body of the EIR (appendices are available electronically by from the above listed website) are available at the following locations:

- Evergreen Branch Library, 2635 Aborn Road, San José, CA 95121
- Martin Luther King Branch Library, 150 E. Fernando Street, San José, CA 95121
- San Benito County Library, 470 Fifth Street, Hollister, CA 95023
- Merced County Library, 1312 South 7th Street, Los Banos, CA 93635

Valley Water is circulating this Draft EIR for a 45-day public review and comment period and will host a public hearing during this period. The purpose of public circulation and the public hearing is to provide agencies and interested individuals with opportunities to comment on the contents of the Draft EIR.

Written comments or questions concerning this Draft EIR should be mailed or emailed during this review period and should be directed to the name and address listed below. Please submit your response at the earliest possible date, but no later than 45 days from release of the Draft EIR (September 12, 2024).

Michael F. Coleman, Environmental Planner
Environmental Planning Unit, Santa Clara Valley Water District
5750 Almaden Expressway
San José, CA 95118-3686
(408) 630-3096
mcoleman@valleywater.org

Written comments received on the Draft EIR will be addressed in the Final EIR.

1 Introduction

Santa Clara Valley Water District (Valley Water) proposes to update its existing Pipeline Maintenance Program (PMP or program) and PMP Manual, which serves, and would continue to serve, as a planning and implementation document to maintain Valley Water's raw, potable, and recycled water pipelines and associated conveyance system facilities. This Draft Program Environmental Impact Report (PEIR) has been prepared to evaluate the potential environmental effects of implementing the proposed updates to the program. This chapter provides introductory information to orient the reader to the program and the environmental analysis.

The Draft PEIR has been prepared in compliance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before acting on those projects. CEQA requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant environmental effects of projects it approves or implements. The purpose of an EIR is "to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." (Public Resources Code [PRC] Section 21002.1(a).) If a project would result in significant and unavoidable environmental impacts that cannot be feasibly mitigated to less-than-significant levels, the project can still be approved, but the lead agency's decision-maker (e.g., Board of Directors) must issue a "statement of overriding considerations" explaining, in writing, the specific economic, social, or other considerations that they believe make those significant effects acceptable (PRC Section 21002; California Code of Regulations [CCR] Section 15093 of the State CEQA Guidelines).

The relevant statute and regulations guiding the preparation of this PEIR are:

- PRC Section 21000 et seq.
- CCR, Title 14, Division 6, Chapter 3, Section 15000 et seq.

This PEIR evaluates the significant or potentially significant adverse effects on the physical environment resulting from the implementation of the program; describes feasible measures to mitigate any significant or potentially significant adverse effects; and considers alternatives that may lessen one or more of the significant or potentially significant adverse effects.

1.1.1 Geographic Overview

The area covered by the updated PMP encompasses all of Valley Water's raw, treated, and recycled water conveyance pipeline systems and related facilities and appurtenances in Santa Clara County and limited portions of San Benito and Merced counties (Figure 1.2-1).

Conveyance system components are within Valley Water fee-title properties, rights-of-way (ROWs), or public utility easements, except for the Santa Clara Conduit and the Pacheco Conduit, which are on property easements that are owned by the U.S. Bureau of Reclamation. The updated PMP area also includes streams, fields, storm drains, and channels where releases of pipeline water can occur.

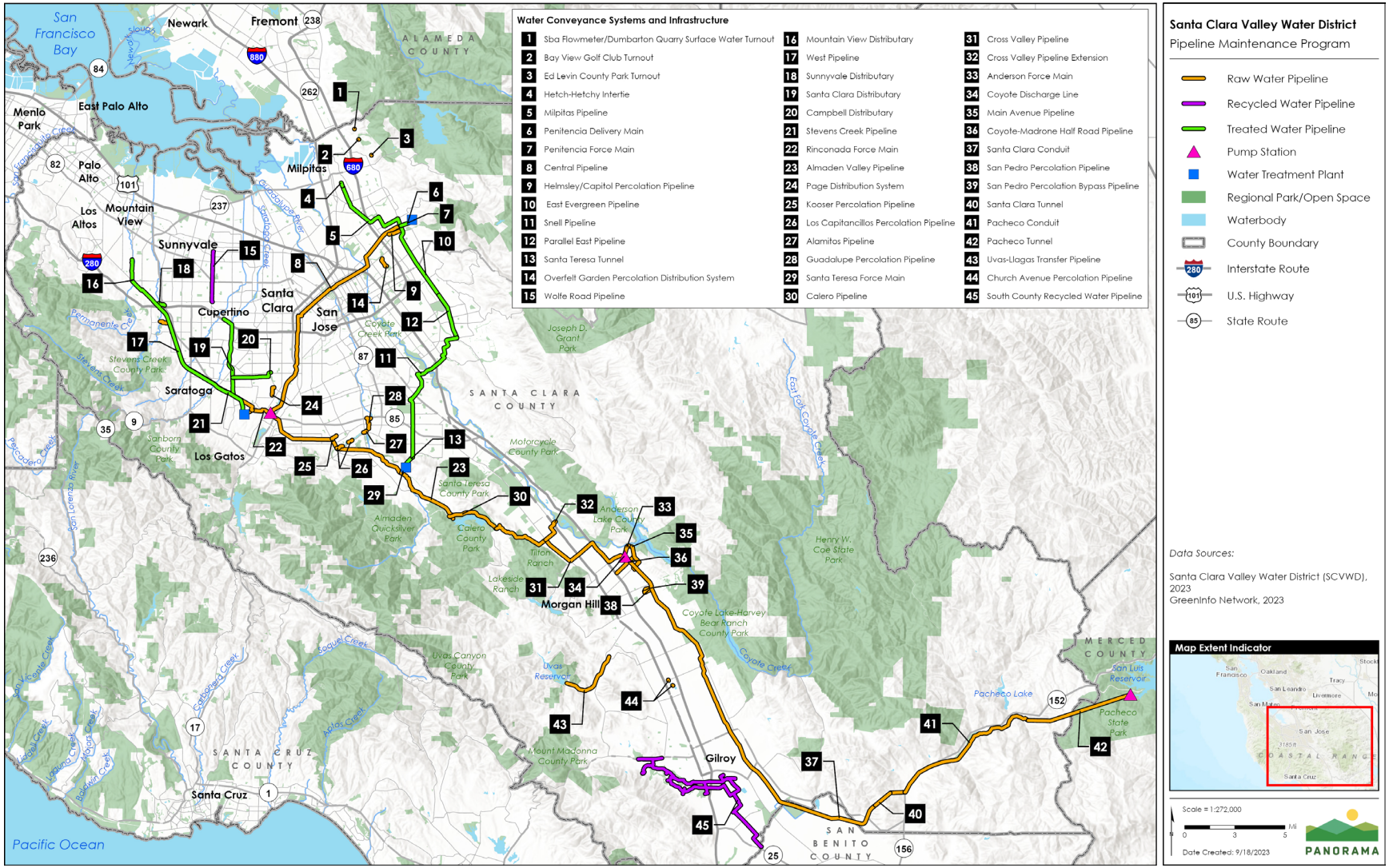
1.2 Pipeline Maintenance Program History and Overview

1.2.1 Pipeline Maintenance Program History and Overview

Valley Water conducts routine maintenance on its water conveyance systems in order to ensure the reliability and quality of water service. Prior to 2007, routine maintenance activities were subject to case-by-case determination of potential for environmental impact and the appropriate CEQA review. In September 2007, Valley Water initiated implementation of the original Pipeline Maintenance Program (2007 PMP or existing PMP), which was developed to prescribe processes and procedures for implementation of pipeline inspection, rehabilitation, and maintenance work. The 2007 PMP provided long-term guidance on implementation of the program and established processes for associated environmental documentation and permitting of covered activities. The 2007 PMP included the following maintenance activities:

- Air release valve maintenance
- Leak repair
- Cathodic protection and monitoring
- Internal inspection
- Replacement/repair of buried service valves (including valves within creek embankments)
- Replacement/repair of appurtenances, fittings, manholes, and meters
- Vault maintenance
- Telemetry cable/system inspection
- Access road repairs
- Bank stabilization.

Figure 1.2-1 Program Area and Updated PMP System



1.2.2 Updated Pipeline Maintenance Program Overview

Various changes have occurred since the 2007 PMP was finalized, including field procedures and environmental and regulatory conditions. Thus, Valley Water has determined that an updated PMP and accompanying updated PMP Manual is needed. This update brings Valley Water's documentation of pipeline inspection and rehabilitation practices to current regulations, standards, and procedures. Like the 2007 PMP Manual, the updated PMP Manual documents typical work activities and establishes a process for determining the level of environmental review required for maintenance activities. The Draft Updated PMP Manual is provided in Appendix A.

The updated PMP covers inspection, maintenance, rehabilitation and/or repair of all existing conveyance systems (including pipelines and tunnels) for raw, treated, and recycled water that are owned and/or operated by Valley Water. The updated PMP includes the following maintenance activities:

- Inspection Activities
  - External inspections (ground-disturbing and non-ground-disturbing)
  - Internal inspections
- Facility Maintenance Activities
  - Buried and exposed pipeline component maintenance, including pipeline sections, valves, and fittings
  - Tunnel maintenance
  - Manhole, meter, vault, and related appurtenance maintenance
  - System instrumentation, controls, and monitoring
  - Backup generator maintenance
  - Pump station and facility maintenance
  - Storage tank and facility maintenance
  - Surge tank maintenance
  - Access road and support structure maintenance
  - Bank stabilization, erosion control, and energy dissipation device maintenance
  - Vegetation management.

1.2.3 Evolution of the Program Environmental Impact Report

As described in State CEQA Guidelines section 15168(a)(3), a PEIR "may be prepared on a series of actions that can be characterized as one large project and are related either:

- geographically,
- as logical parts in the chain of contemplated actions,
- in connection with the issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program, or
- as individual activities carried out under the same statutory authority and having generally similar environmental effects which can be mitigated in similar ways.

A Program EIR "may be prepared on a series of actions that can be characterized as one large project and are related ... [i]n connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program" [CEQA Guidelines Section 15168(a)(3)].

The use of a PEIR provides the following advantages:

- Provides an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action.
- Ensures consideration of cumulative impacts that might be overlooked in a case-by-case analysis.
- Avoids duplicative reconsideration of basic policy considerations.
- Allows the lead agency to consider broad policy alternatives and program-wide mitigation measures early when the agency has greater flexibility to deal with basic problems or cumulative impacts.
- Allows a reduction in paperwork.

A PEIR is most helpful in addressing subsequent activities if it analyzes the effects of the program as specifically and comprehensively as possible. With a thorough analysis of the program, many subsequent activities can be found to be within the scope of the plan described in the PEIR, and no further environmental documents would be required to carry out the PMP.

This PEIR focuses on the overall effects of the PMP. The PMP is presented in considerable detail, and therefore, actions under the PMP are expected to proceed without further CEQA review upon certification of the EIR. Individual maintenance activities may require additional CEQA review, as determined by review of these activities via a preliminary environmental review checklist (a draft is included in Appendix D). Additional CEQA analyses and documentation can be tiered from this PEIR if the effects of these actions are not fully covered here.

1.3 California Environmental Quality Act Compliance

1.3.1 Overview

Valley Water is the lead agency under CEQA because it is the public agency proposing to approve and carry out the PMP. The California Department of Fish and Wildlife (CDFW), State Water Resources Control Board (SWRCB), and San Francisco Bay Regional Water Quality Control Board (RWQCB), are considered responsible agencies under CEQA because they have discretionary approval over some aspect of the program (see Section 1.4) and would likely rely on this document for their CEQA compliance.

CEQA's primary purposes (CEQA Guidelines Section 15002) are to:

- 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.

As described in the CEQA Guidelines Section 15121(a), an EIR is a public information document that assesses potential environmental effects of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts.

1.3.2 Scope of the Program Environmental Impact Report and Key Resource Topics Addressed

Pursuant to CEQA, the discussion of potential effects on the physical environment from the implementation of the PMP is focused on impacts that may be significant or potentially significant. CEQA allows a lead agency to limit the discussion of environmental effects that are not considered potentially significant (PRC section 21100, CCR sections 15126.2[a], and section 15128 of the State CEQA Guidelines). CEQA requires that the discussion of any significant effect on the conditions that exist within the affected area, as defined in PRC section 21060.5 (statutory definition of "environment").

The scope of this Draft PEIR includes the resource topics for which potentially significant impacts could occur, as listed below. This list is based on a review of background information, comments received during the scoping process, and professional judgement.

- Aesthetics
- Agriculture and Forestry
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources

- Utilities and Service Systems
- Wildfire

1.4 Required Permits, Approvals, Environmental Reviews, and Consultations

As the lead agency, Valley Water will rely on the information in this EIR for its Board of Directors to decide whether to approve the program.

This EIR would be used by local and state agencies that would also make a decision to approve aspects of the program. Depending on the degree of ground disturbance and environmental resources within and around covered activity footprints, various ministerial and/or discretionary permits or authorizations may need to be obtained from local, State, or federal regulatory authorities before the start of covered activities.

As potential Responsible Agencies for implementation of the Project, these agencies and their potential approvals include:

- Local jurisdictions, which Valley Water may need to coordinate with regarding local ordinances, such as tree removal ordinances, noise ordinances, or traffic control planning, as appropriate.
- Bay Area Air Quality Management District (BAAQMD), which may issue Authorities to Construct and Permits to Operate stationary source equipment.
- CDFW, which would issue Lake and Streambed Alteration Agreement or Routine Maintenance Agreement and provide California Endangered Species Act (CESA) Section 2081 authorization for incidental take for program activities. Incidental take is currently authorized by the Santa Clara Valley Habitat Plan (VHP) for terrestrial species within VHP boundaries; incidental take permits may be required for terrestrial species outside VHP boundaries.
- SWRCB, which issues the Statewide Discharge Permit and Construction General Permit under which program activities would apply for coverage, as well as the Water Reclamation Requirements for Recycled Water Use, under which Valley Water operates its recycled water system.
- San Francisco Bay RWQCB, which may issue a water quality certification or waste discharge requirements for activities involving discharges of dredged or fill material to waters of the state, including waters of the United States.

Federal agencies that would authorize components of the program may also use information from this PEIR to support their decision-making. In making their decisions, federal agencies would also comply with applicable environmental review and consultation requirements under the National Environmental Policy Act, Section 404 of the Clean Water Act (CWA), Section 7 of the federal Endangered Species Act (FESA), and Section 106 of the National Historic Preservation Act (NHPA). These federal agencies and their potential approvals include:

- **CWA:** U.S. Army Corps of Engineers (USACE), which for non-flow measures would issue Section 404 permits for the discharge of dredged or fill materials to waters of the United States. In order to issue a permit, USACE would need to comply with Section 7 of the FESA and Section 106 of the NHPA.
- **FESA:** For activities likely to adversely affect fish or wildlife species listed for protection under the FESA, take authorization under the FESA could be issued by either the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS), depending on the listed species, under Sections 7 or 10. Under formal Section 7 consultation, USFWS or NMFS would provide a biological opinion and incidental take statement to the consulting federal agency, also issuing a permit for activities likely to adversely affect a listed species. For measures likely to adversely affect listed species that do not require approval of any federal agency other than USFWS or NMFS, USFWS or NMFS would issue an incidental take permit under FESA Section 10(a)(1)(A) if take could result from scientific study or monitoring or recovery efforts. USFWS or NMFS could also authorize take incidental to otherwise lawful activities and approve a habitat conservation plan (HCP) under ESA Section 10(a)(1)(B). Incidental take for terrestrial species within VHP boundaries is authorized by the VHP for pipeline maintenance activities upon applicant satisfaction of VHP conditions.
- **NHPA:** Federal agency issuance of a permit or authorization for any measures likely to adversely affect historic or cultural resources would also require consultation with the State Historic Preservation Officer, in compliance with Section 106 of the NHPA.

Table 1.4-1 summarizes the potential approvals for each local, state, and federal agency. This PEIR has been prepared to provide information that each agency can use during its environmental review and/or consultation process prior to its approval decision. These regulations may be updated or could change over the life of the updated PMP.

Table 1.4-1 Potential Permits or Approvals

Agency Type	Agency	Potential Permits or Approvals
Local	Local ordinances, multiple jurisdictions	• Local ordinances, such as tree removal ordinances, noise ordinances, or traffic control planning, as appropriate
Regional	BAAQMD	• Authority to Construct and Permit to Operate stationary source equipment
State	CDFW	• Routine Maintenance Agreement[a] • Fish and Game Code Section 1602 Lake and Streambed Alteration Agreements • Natural Community Conservation Plan (via the VHP)

Agency Type	Agency	Potential Permits or Approvals
State	SWRCB	• Statewide Discharge Permit (No. 4DW062) under Order WQ-2014-0194-DWQ • Water Reclamation Requirements for Recycled Water Use, Order WQ 2016-0068-DDW • General Permit for Discharges of Storm Water Associated Construction Activity (Construction General Permit, 2022-0057-DWQ)
State	San Francisco Bay RWQCB	• CWA Section 401 Certification
Federal	USACE	• CWA Section 404 Permit
Federal	USFWS/NMFS	• FESA Section 7 Consultation • FESA Section 10 Habitat Conservation Plan (via the VHP)
Federal	State Historic Preservation Officer	• NHPA Section 106 Consultation

Note:

[a] In compliance with Fish and Game code 1602, Valley Water has historically applied for individual Lake and Streambed Alteration Agreements for raw water releases on streams containing steelhead. Valley Water intends to pursue a Routine Maintenance Agreement in collaboration with CDFW to provide regional permit coverage for updated PMP-related activities, including raw water releases

Under CEQA, a trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070). The CDFW is a trustee agency with jurisdiction over fish and wildlife and their habitats that may be affected by the PMP. The State Department of Parks and Recreation is also a trustee agency because portions of the PMP would be on property within the State Park System.

1.5 Other Related Valley Water Projects (Not Part of PMP)

Valley Water is undertaking a number of programs throughout its service area that are not part of the PMP but may affect related resources or have similar objectives but retain independent utility. Thus, these are noted when relevant to the impact analyses and will be addressed, as appropriate, in the analysis of cumulative effects. These related projects and programs are listed in Table 1.5-1, with a more detailed description and analysis included in Section 4.3.1, Approach to Cumulative Impacts Analysis, which also identifies additional Valley Water projects and programs and projects not included Table 1.5-1.

Table 1.5-1 Selected Other Valley Water Programs and Projects

Valley Water Program	Brief Description	Linkage to PMP
Seismic Retrofit Projects	The following projects are in progress to protect the facilities against potential earthquakes: • Guadalupe Reservoir Retrofit Project • Calero Dam Seismic Retrofit Project • Anderson Dam Seismic Retrofit Project	These projects are providing seismic improvements to existing dam structures and facilities to ensure functions and operation of the reservoirs that provide water to program pipelines.
Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program for Stevens Creek and Guadalupe River Watersheds	This project proposes implementation of the FAHCE Fish Habitat Restoration Plan (FHRP) Phase 1 measures and FHRP Adaptive Management Program in the Stevens Creek and Guadalupe River watersheds, and amendments to associated Valley Water water rights (within those two watersheds only).	FAHCE Program work may be conducted in streams near PMP facilities or in steams where PMP releases may occur.
Dam Maintenance Program	The program identifies dam maintenance and repair activities to be executed in a series of 5-year work plans. The work includes regulatory compliance, for example, complying with permits issued by CDFW and the San Francisco and Central Coast RWQCBs, and a take authorization for protected terrestrial species under the VHP.	Under this program, Valley Water maintains dam structures and facilities to ensure functions and operation of the reservoirs that provide water to PMP-covered pipelines.
Stream Maintenance Program	The Stream Maintenance Program performs sediment removal, bank protection, vegetation management, and other routine maintenance activities throughout the county, including Coyote Creek. Although the primary work season is from June 15 through October 15, some stream maintenance activities can occur year-round in reaches where Valley Water holds fee title or easement.	Stream Maintenance Program work is conducted routinely in streams near PMP facilities or in steams where PMP releases may occur.
Safe, Clean Water and Natural Flood Protection Program	The Safe, Clean Water and Natural Flood Protection Program provides grant and partnership funds for many water quality and habitat improvements projects. For example, as part of this program, Valley Water, Priority D projects are focused on restoring and protecting wildlife habitat. Work under this priority includes controlling nonnative, invasive plants, replanting native species, and maintaining previously replanted areas. Other projects include removing barriers to fish movement, improving steelhead habitat, and stabilizing eroded creek banks. These priority projects also include Valley Water partially funding a creek/lake separation project in partnership with local agencies.	Projects under the Safe, Clean Water and Natural Flood Protection Program may occur near PMP facilities or in steams where PMP releases may occur.

Valley Water Program	Brief Description	Linkage to PMP
San Jose Water Company Activities	The San Jose Water Company is a private entity that retails water within Santa Clara County. The San Jose Water Company is the District's largest client for treated water, but also has several of its own facilities within the County, including pipelines, pump stations, water diversions on Saratoga and Los Gatos Creeks, etc.	PMP activities may need to be planned so as not to interrupt deliveries to San Jose Water Company. San Jose Water Company activities and projects may also occur near PMP facilities and PMP activities.

1.6 Public Involvement Process

1.6.1 California Environmental Quality Act Scoping Process

Scoping refers to the public outreach process used in CEQA processes to solicit feedback on the scope of an EIR and the initial CEQA planning process. The scoping comment period offers an important opportunity for public review and comment in the early phases of a project. The scoping process for an EIR is initiated by publication of the Notice of Preparation (NOP) to provide formal notice to the public and to interested agencies and organizations that the lead agency is preparing a draft EIR. The purpose of the NOP is to notify the public, responsible agencies, and trustee agencies of the intent to prepare an EIR and to solicit feedback as to the scope and content of the environmental information to be included in the environmental review (CEQA Guidelines Section 15375). During the scoping period, agencies and the public are invited to comment on the project, the approach to environmental analysis, and any issues of concern. A copy of the NOP is provided in Appendix B.

Notice of Preparation Comments

Valley Water circulated the NOP from October 17 through November 22, 2023. The NOP identified Valley Water as the lead agency for the program and was circulated to the public; the Governor's Office of Planning and Research; responsible, trustee, and other relevant local, state, and federal agencies; and other interested parties and members of the public. Valley Water published the NOP in the San Jose Mercury News, Merced Sun-Star, and the Hollister Free Lance on October 27, 2023. The State Clearinghouse Number for the Program is 2023100671.

Valley Water received four comment letters in response to the NOP from the following organizations:

- California Department of Transportation, dated November 22, 2023
- CDFW, dated November 29, 2023
- National Historic Preservation Act (NAHC), dated October 24, 2023
- Santa Clara County Parks and Recreation Department, dated November 21, 2023

Scoping Meeting

To provide an opportunity for additional public input on the scope and content to be addressed in the EIR, Valley Water held a public scoping meeting via webinar on November 2, 2023, from 2:30 to 4 p.m. During the scoping meeting, a slide presentation was displayed. Throughout the

scoping meeting, discussions with meeting attendees were documented. No public comments were received at the scoping meeting.

Tribal Consultation

Assembly Bill (AB) 52, passed in 2014, requires formal consultation with Native American tribes during the CEQA process for projects that have an NOP filed on or after July 1, 2015. A request for a search of the Sacred Lands File (SLF) maintained by the NAHC and Tribal Contact List was sent to the NAHC on February 8, 2023. The request encompassed the entire program area. The NAHC responded on February 20, 2023, with positive results for sacred lands within the program area, and provided a list of 23 tribal representatives for Santa Clara, Merced, and San Benito counties. A supplemental SLF search request was sent to the NAHC on August 18, 2023, in response to the addition of the Alamitos Pipeline as part of the PMP; the NAHC responded on August 27, 2023, with positive results for sacred lands and sent an updated contact list of 37 tribal representatives for Santa Clara, Merced, and San Benito counties. Notification letters regarding the PMP were mailed to all 37 tribal representatives on September 20, 2023. The mailing notification included those who have formally requested consultation as well as those identified from the NAHC list within the program area. Valley Water requested a response within 30 days of receipt regarding knowledge of cultural resources, sacred lands, or other heritage sites that may be potentially impacted by proposed PMP activities. One tribe, the Tuolumne Band of Me-Wuk Indians, responded to clarify that the project area is outside of the tribe's ancestral area. No other tribal responses were received within the allotted timeframe or thereafter.

1.6.2 Draft Environmental Impact Report Comment Period

Valley Water has issued a Notice of Availability to provide agencies and the public with formal notification that the Draft EIR is available for review and comment. Copies of the Draft EIR and selected appendices are available at the following website:

www.valleywater.org/project-updates/pipeline-maintenance-program

The Draft EIR and all appendices are available in an electronic version on external storage devices at the following locations:

- Valley Water, 5750 Almaden Expressway, San José, CA 95118
- Los Gatos Library, 100 Villa Avenue, Los Gatos, CA 95030
- Cupertino Library, 10800 Torre Avenue, Cupertino, CA 95014
- Milpitas Library, 60 North Main Street, Milpitas, CA 95035
- Morgan Hill Library, 660 West Main Avenue, Morgan Hill, CA 95037
- Gilroy Library, 350 West 6th Street, Gilroy, CA 95020

Hard copies of the body of the EIR (appendices are available electronically by from the above listed website) are available at the following locations:

- Evergreen Branch Library, 2635 Aborn Road, San José, CA 95121
- Martin Luther King Branch Library, 150 E. Fernando Street, San José, CA 95121

- San Benito County Library, 470 Fifth Street, Hollister, CA 95023
- Merced County Library, 1312 South 7th Street, Los Banos, CA 93635

Valley Water is circulating this Draft EIR for a 45-day public review and comment period and will host a public hearing during this period. The purpose of public circulation and the public hearing is to provide agencies and interested individuals with opportunities to comment on the contents of the Draft EIR.

Written comments or questions concerning this Draft EIR should be mailed or emailed during this review period and should be directed to the name and address listed below. Please submit your response at the earliest possible date, but no later than 45 days from release of the Draft EIR (September 12, 2024).

Michael F. Coleman, Environmental Planner
Environmental Planning Unit, Santa Clara Valley Water District
5750 Almaden Expressway
San José, CA 95118-3686
(408) 630-3096
mcoleman@valleywater.org

Written comments received on the Draft EIR will be addressed in the Final EIR.

1.6.3 Preparation of Final EIR

All written comments received on the adequacy of this Draft EIR during the public review period will be addressed in writing in a "response-to-comments" chapter in the Final EIR, which, together with this Draft EIR, will constitute the Final EIR. The response-to-comments and Final EIR will also present any changes to the Draft EIR resulting from public and agency comments, and Valley Water staff-initiated changes.

Prior to any decision on the program, the Valley Water elected Board of Directors will exercise its independent judgment to determine whether the Final EIR complies with CEQA and whether to certify the document at a regularly scheduled Board meeting. Upon EIR certification, Valley Water may proceed with program-approval actions. Approval of the program would be preceded by written findings for each significant adverse environmental effect identified in the EIR (CEQA Guidelines Section 15091), and if necessary, a statement of overriding considerations (CEQA Guidelines Section 15093). At the time that CEQA findings are adopted, Valley Water would also adopt a mitigation monitoring and reporting program for adopted mitigation measures (CEQA Guidelines Section 15094).

1.7 Areas of Known Controversy

CEQA Guidelines Section 15123(b) states that an EIR must identify areas of known controversy that might have been raised by other agencies, the public, or other stakeholders. No areas of controversy related to the program or EIR were identified during the EIR scoping process.

1.8 Organization of the Draft Environmental Impact Report

The EIR is organized into the following main chapters:

- **Acronyms and Abbreviations.** Provides a list of all acronyms and abbreviations used in the PEIR.
- **Executive Summary.** This chapter includes a summary of the PMP evaluated in this EIR. It includes a table that summarizes the impacts, mitigation measures, and level of significance after mitigation measures are incorporated.
- **Chapter 1: Introduction.** This chapter provides an introduction and overview describing the PMP, purpose and scope of this EIR, brief explanation of the areas of consideration and issues to be resolved, and a summary of the CEQA review process.
- **Chapter 2: Project Description.** This chapter describes the PMP including objectives, location, and actions and activities covered in the PMP. A list of responsible agencies and required approvals is included.
- **Chapter 3: Environmental Analysis.** This chapter analyzes the environmental impacts of the PMP. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation.
  - **Section 3.0: Introduction to Environmental Analysis.** This section provides an overview of the environmental analysis and presents the format for each topical section. It describes issues that have been determined to have no or less-than-significant impacts and therefore are not carried forward for further analysis. The approach for the analysis of cumulative impacts is also described.
  - **Section 3.1: Hydrology and Water Quality.** This section addresses impacts on local hydrological conditions, including drainage areas, and changes in water quality.
  - **Section 3.2: Geology and Soils.** This section evaluates the potential for local geological hazards to impact PMP activities.
  - **Section 3.3: Biological Resources.** This section addresses impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.
  - **Section 3.4: Hazards and Hazardous Materials.** This section addresses the likelihood of the presence of hazards and hazardous materials or conditions during PMP activities that may have the potential to impact human health.

  - **Section 3.5: Transportation.** This section addresses impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.
  - **Section 3.6: Cultural Resources.** This section addresses impacts on known historical resources and potential archaeological resources.
  - **Section 3.7: Tribal Cultural Resources.** This section addresses impacts on known tribal cultural resources.
  - **Section 3.8: Air Quality.** This section addresses local and regional air quality impacts as well as consistency with applicable air district rules and regulations.
  - **Section 3.9: Greenhouse Gas Emissions.** This section addresses the potential for PMP activities to generate greenhouse gases.
  - **Section 3.10: Energy.** This section evaluates energy consumption.
  - **Section 3.11: Noise.** This section addresses potential construction noise impacts from mobile and stationary sources and also addresses the impact of noise generation on neighboring uses.
  - **Section 3.12: Aesthetics.** This section evaluates impacts on visual and scenic resources.
  - **Section 3.13: Wildfire.** This section addresses impacts associated with wildfire risk.
  - **Section 3.14: Utilities and Service Systems.** This section evaluates the potential impacts on utility facilities including water, wastewater, and solid waste.
  - **Section 3.15: Land Use and Planning.** This section addresses impacts on land use and planning, including consistency with land use plans and policies.
  - **Section 3.16: Recreation.** This section evaluates PMP impacts on existing recreational facilities.
  - **Section 3.17: Public Services.** This section addresses PMP impacts on public services such as schools, fire protection, and police protection.
  - **Section 3.18: Agriculture and Forestry Resources.** This section evaluates impacts on agricultural and forestry resources.
- **Chapter 4: Other CEQA Considerations.** This chapter describes potential growth-inducing impacts associated with the program, a summary of significant environmental impacts, including unavoidable and cumulative effects, and the program's irreversible and irretrievable commitment of resources.
- **Chapter 5: Alternatives.** This chapter compares the impacts of the PMP with other alternatives considered by Valley Water, including the No Project Alternative. The environmentally superior alternative is evaluated.
- **Chapter 6: Document Preparers.** This chapter lists the authors that assisted in the preparation of the EIR, by name and company or agency affiliation.
- **Chapter 7: References.** This chapter lists all references and citations used in the preparation of the EIR.
- **Appendices.** This section includes all notices and other procedural documents pertinent to the EIR, as well as all technical material prepared to support the analysis.

2 Project Description

2.1 Introduction

Valley Water provides water resources management for Santa Clara County. Valley Water manages, owns, and operates a range of facilities, including dams, surface water reservoirs, water treatment plants, groundwater recharge facilities, jurisdictional streams, and conveyance systems. Valley Water's conveyance systems include pipelines and related appurtenances for distributing raw, treated, and recycled water.

In September 2007, Valley Water completed development and initiated implementation of the original Pipeline Maintenance Program (2007 PMP), which was developed to prescribe processes and procedures for implementation of pipeline inspection, rehabilitation, and maintenance work. The 2007 PMP's standard procedures and requirements, which were documented in the 2007 PMP Manual (Valley Water 2007), provided long-term guidance on implementation of the program and established processes for associated environmental documentation and permitting of covered activities. The 2007 PMP Manual also identified specific measures, protocols, and reporting requirements to ensure that all pipeline inspection and maintenance activities were implemented in the most efficient and environmentally sensitive manner. Although Valley Water has successfully implemented the 2007 PMP, various circumstances and factors have evolved since that time, including field procedures and environmental and regulatory conditions. Thus, Valley Water has determined that the 2007 PMP requires an update to reflect current conditions. The updated PMP and accompanying updated PMP Manual bring Valley Water's documentation of pipeline inspection and rehabilitation practices up to date. Like the 2007 PMP Manual, the updated PMP Manual documents typical work activities, establishes the responsibilities of the various units at Valley Water, sets forth a process for determining the level of environmental review for maintenance activities, and describes the relationship of the updated PMP to other long-term operations and maintenance (O&M) programs (such as for streams and dams).

The updated PMP covers inspection, maintenance, rehabilitation and/or repair of all existing conveyance systems (including pipelines and tunnels) for raw, treated, and recycled water that are owned and/or operated by Valley Water. Table 2-1 identifies the existing Valley Water pipelines that are included in the updated PMP, including the type, diameter, and length of each pipeline, for which inspection, maintenance, rehabilitation, and/or repair is reasonably foreseeable. The updated PMP, like its predecessor, is anticipated to have a duration of a minimum of 15 years; therefore, during implementation of the updated PMP, Valley Water may identify the need to construct new water conveyance pipelines or systems to address future water supply and distribution needs within its service territory. However, future conditions

and the need for new water conveyance systems are unknown at this time and cannot be predicted. In the event Valley Water identifies the need to construct new pipelines that will be operated and maintained under the updated PMP, the operation and maintenance of the new pipelines would be required to undergo separate CEQA review prior to its inclusion under the program.

In addition to pipelines and tunnels, the updated PMP covers maintenance, inspection, and rehabilitation of facilities and appurtenances associated with operation of these conveyance systems, which include:

- Valves
- Release points
- Vaults
- Meters
- Electrical monitoring systems
- Generators
- Storage tanks
- Vegetation
- Access roads
- Erosion control
- Securing fencing and gates
- Land entitlement
- Pump Stations
- Surge Tanks
- Standpipes

Table 2-1: Valley Water Pipelines Included in the Updated PMP

Name	Water Type	Diameter (inches)	Length (miles)
Alamitos Pipeline	Raw	24	0.2
Almaden Valley Pipeline	Raw	72 to 78	12.3
Anderson Force Main	Raw	54	0.8
Bayview Golf Course Turnout	Raw	6	0.1
Calero Pipeline	Raw	78	2.6
Campbell Distributary	Treated	20	2.0
Central Pipeline	Raw	66	13.1
Church Avenue Percolation Pipeline	Raw	24 to 36	0.1
Coyote Discharge Line	Raw	42	0.5
Coyote–Madrone Half Road Pipeline	Raw	30	1.2

Name	Water Type	Diameter (inches)	Length (miles)
Cross Valley Pipeline	Raw	78	7.9
Cross Valley Pipeline Extension	Raw	36	1.3
East Evergreen Pipeline	Treated	33 to 48	6.4
Ed Levin County Park Turnout	Raw	10	0.01
Guadalupe Percolation Pipeline	Raw	21, 24, and 27	0.8
Guadalupe Water System (Kooser Percolation Pipeline)	Raw	10, 12, 14, and 16	0.3
Helmsley/Capitol Percolation Pipeline	Raw	24	0.8
Hetch–Hetchy Intertie	Treated	42	0.2
Los Capitancillos Percolation Pipeline	Raw	24 and 36	0..2
Main Avenue Pipeline	Raw	36 and 24	1.0
Milpitas Pipeline	Treated	42	4.6
Mountain View Distributary	Treated	24	1.1
Overfelt Garden Percolation System	Raw	18	0.5
Pacheco Conduit	Raw	120	7.9
Pacheco Tunnel	Raw	114	5.4
Page Distribution System	Raw	24	.5
Parallel East Pipeline	Treated	54	4.1
Penitencia Delivery Main	Treated	60	0.5
Penitencia Force Main	Raw	66	0.3
Rinconada Force Main	Raw	72	1.4
Santa Clara Conduit	Raw	66 to 96	22.2
Santa Clara Distributary	Treated	30 to 36	4.1
Santa Clara Tunnel	Raw	116	1.0
Santa Teresa Tunnel	Treated	72	.34
San Pedro Percolation Bypass Pipeline	Raw	10	0.5
San Pedro Percolation Pipeline	Raw	24	0.05
Santa Teresa Force Main	Raw	66	0.2
Snell Pipeline	Treated	60 to 72	9.7

Name	Water Type	Diameter (inches)	Length (miles)
SBA Flowmeter/Dumbarton Quarry Turnout	Raw	6	0.01
South County Recycled Water Pipeline	Recycled	12 to 36	10.8
Stevens Creek Pipeline	Raw	20 to 37	9.8
Sunnyvale Distributary	Treated	33	0.5
Uvas–Llagas Transfer Pipeline	Raw	27 to 39	3.2
West Pipeline	Treated	30 to 84	9.1
Wolfe Road Pipeline	Recycled	24	2.6

2.2 Comparison of the 2007 PMP and Updated PMP

As described in Chapter 1, this PEIR has been prepared as a standalone EIR because of changes in the elements of the updated PMP as well as changes in regulatory circumstances. Because the 2007 PMP and the updated PMP overlap and are highly interrelated, it is difficult to separate the new elements of the updated PMP to accommodate a tiered analysis. Therefore, the project description of the updated PMP is comprehensive and includes activities that are described in the 2007 PMP Manual as well as the proposed changes to be included in the updated PMP Manual.

The key differences between the 2007 PMP and the updated PMP, and differences in circumstances since preparation of the 2007 PMP Manual, are as follows:

- **Coverage of additional facilities:** The 2007 PMP covered raw and treated water conveyance systems. Since establishing the 2007 PMP, Valley Water has begun to operate recycled water pipelines. The updated PMP expands on the 2007 PMP to include inspection and rehabilitation of the recycled water conveyance systems, in addition to the raw and treated water conveyance systems. Valley Water manages recycled water in partnership with the South County Regional Wastewater Authority (SCRWA) and the cities of Gilroy and Morgan Hill for the South County Recycled Water Pipeline, and with the City of Sunnyvale for the Wolfe Road Recycled Water Pipeline. In addition, other raw or treated water pipelines that have been constructed since the 2007 PMP was completed are covered under the updated PMP. The updated PMP also specifies that components of the conveyance system, such as pump stations, storage tanks, standpipes, and surge tanks, are covered.
- **Updates to activities and tasks:** The covered activities and tasks are substantially the same between the 2007 PMP and updated PMP. The updated PMP has been updated to cover vegetation management that may be required at or near updated PMP facilities, to maintain clearance or for staging and access. In addition, the updated PMP also reflects that land entitlements (e.g., land

acquisition, rights-of-way [ROWs], and/or easements) may be required on or near existing pipeline infrastructure to conduct maintenance.

- **Changes to regulatory environment:** The VHP was enacted in 2013 (ICF and Valley Water 2012). As a VHP permittee, Valley Water is required to implement VHP conditions, triggered by its VHP-covered activities (as further described in Section 2.7.5). The PMP is described in the VHP, and pipeline maintenance activities are included as covered activities in the VHP.

2.3 Program Area and Work Sites

The area covered by the updated PMP encompasses all of Valley Water's raw, treated, and recycled water conveyance pipeline systems and related facilities and appurtenances in Santa Clara County and limited portions of San Benito and Merced counties (Figure 2-1). Conveyance system components are within Valley Water fee-title properties, ROWs, or public utility easements, except for the Santa Clara Conduit and the Pacheco Conduit, which are on property easements that are owned by the U.S. Bureau of Reclamation. The updated PMP area also includes streams, fields, storm drains, and channels where releases of pipeline water can occur.

Program work sites encompass the areas surrounding pipelines and other associated infrastructure that is covered under the updated PMP (e.g., access roads, tanks, pump stations, turnouts), to be used to provide the necessary clearance to accommodate covered activities.

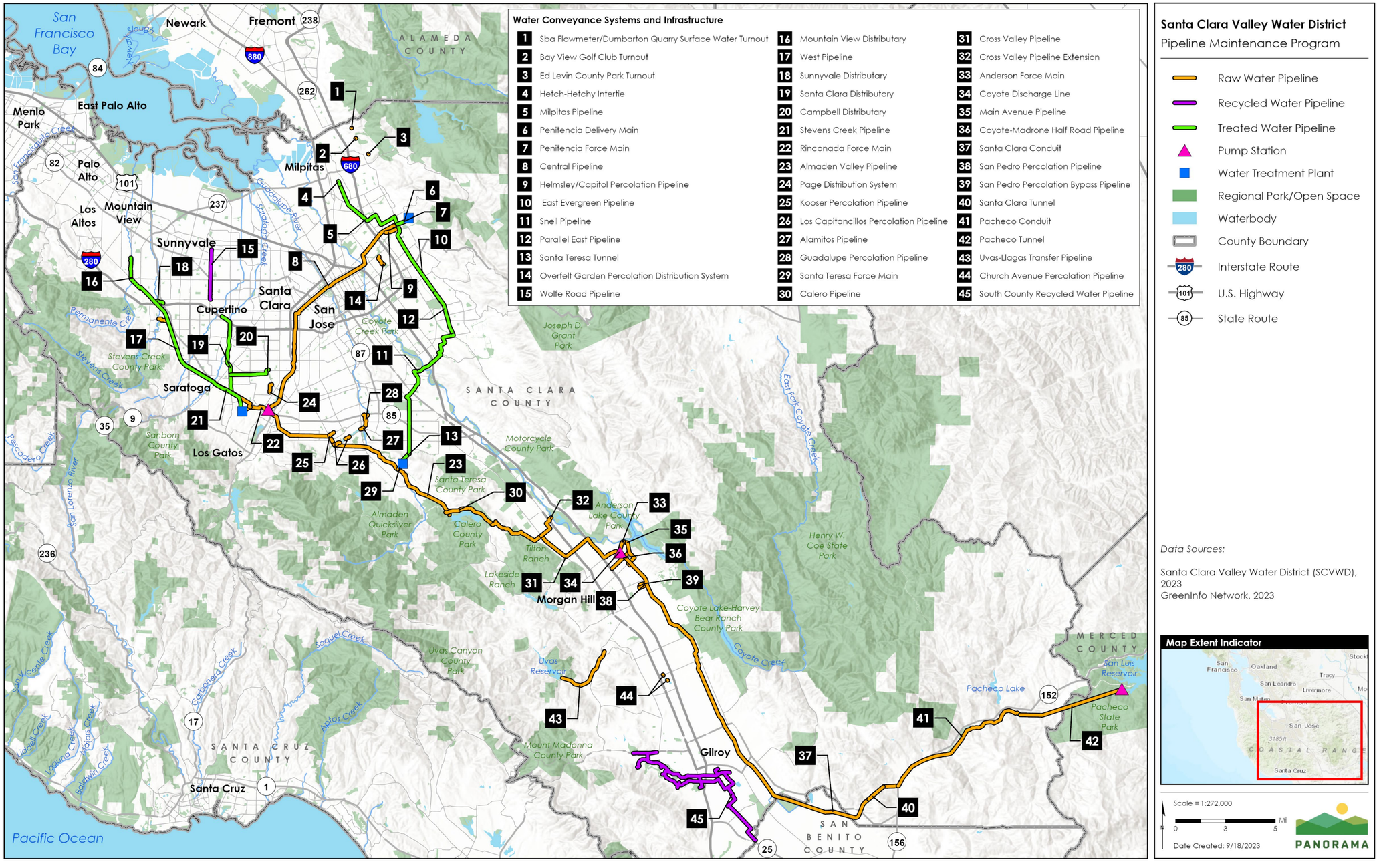
2.4 Program Objectives

Consistent with the 2007 PMP, the updated PMP is needed to meet Valley Water's "Ends policies," further discussed below. PMP-covered activities and tasks are necessary to meet Valley Water's obligations to deliver safe and reliable service as a water purveyor. The purpose of the updated PMP is two-fold—to identify and guide the range of maintenance activities required to meet the pipeline conveyance system's operational needs, and to integrate these maintenance activities with the appropriate permitting and/or environmental review processes.

The objectives of the updated PMP are to:

1. Define standard practices and procedures for maintenance activities associated with Valley Water's conveyance systems.
2. Enhance operational flexibility and adaptive management opportunities for evaluating and improving the maintenance activities defined in the PMP through learned experiences and successive planning over time.
3. Streamline the environmental documentation and local, State, and federal permit processing where required to facilitate efficient and timely maintenance and repair of the pipeline system.

Figure 2-1: Program Area and Updated PMP System



The updated PMP Manual also serves as a policy guide for pipeline maintenance, in the context of Valley Water's overall guiding policies. Specifically, the updated PMP Manual supports Valley Water's implementation of the One Water Plan[1] (Valley Water 2022), the Water Supply Master Plan 2040 (SCVWD 2019), and the Asset Management Program, along with furthering Valley Water's mission, goals, and policies.

In support of its mission, Valley Water developed the Countywide Water Reuse Master Plan (CoRe Plan) (Brown and Caldwell 2021) and the One Water Plan approach as a 50-year roadmap for integrated water resource planning. The updated PMP is Valley Water's guide to addressing water conveyance reliability in its mission areas of water supply planning, flood protection, and ecosystem stewardship, in alignment with the One Water approach. Proper rehabilitation of pipelines is critical to achieving Valley Water's mission; imported water from the Sacramento–San Joaquin Delta is Valley Water's largest source of supply, and a single event such as a pipeline failure could adversely impact these deliveries.

Valley Water's water supply planning efforts, such as the Water Supply Master Plan 2040 (Valley Water 2019), focus on identifying strategies that will provide a reliable and sustainable supply of water for Santa Clara County, with consideration of climate change, economic and regulatory uncertainties, environmental and social conflicts, and other risks. The updated PMP aligns with these strategies by guiding implementation of critical maintenance efforts for almost 150 miles of pipelines that bring water to replenish the local groundwater subbasins, supply Valley Water's drinking water treatment plants, supply agricultural users, and help meet environmental goals.

Droughts are identified in the Water Supply Master Plan 2040 as the greatest challenge to water supply reliability. Santa Clara County faces water supply challenges that are driven by reoccurring droughts, growth in population and businesses, and variabilities of imported water. The updated PMP Manual expands on the 2007 PMP Manual, to include maintenance of Valley Water's recycled water systems, which will allow greater efficiency in completing projects. Valley Water is investing in locally reliable, sustainable, and efficient water supplies, such as recycled and purified water. Functional, operational, and maintained recycled-water pipelines are critical to ensuring that Valley Water can meet its goal of providing enough recycled and purified water to serve at least 10 percent of the total county water demands by 2025.

Furthermore, the updated PMP builds on Valley Water's Ends policies and other policies set by the Board of Directors, intended to guide its Board-appointed officers in accomplishing its overall mission (Valley Water, n.d.). Pipeline and facilities maintenance, as defined in the

[1] The One Water Plan establishes a vision, goals, objectives, and strategies to manage Santa Clara County water resources. The One Water approach includes a focus on achieving multiple benefits, approaching decisions with a systems mindset, and using watershed-scale thinking to manage water resources.

updated PMP Manual, adheres to the following relevant "Ends" policies (officially adopted January 18, 2005, and last revised June 22, 2021):

***Policy No. E-2 Water Supply**:* Valley Water provides a reliable, safe, and affordable water supply for current and future generations in all communities served.

WS Goal 2.1 Meet 100 percent of annual water demand during non-drought years and at least 80 percent of demand in drought years.

WS Goal 2.3 Protect and maintain existing water infrastructure.

WS Objectives

2.3.1. Plan for infrastructure maintenance and replacement to reduce risk of failure.

2.3.2. Prioritize funding for maintenance and replacement of existing water infrastructure over investments in new infrastructure.

2.3.3. Prepare for and respond effectively to water utility emergencies.

WS Goal 2.5 Manage water resources using an integrated, science-based approach.

WS Objectives

2.5.1. Plan for future water supply needs.

2.5.2. Promote efficient and reliable operation of water supply systems.

2.5.3. Promote water supply projects with multiple benefits, including environmental stewardship and flood protection.

2.5.4. Invest in and rely on science to support planning and decision-making.

2.5.5. Build and maintain effective partnerships to achieve water supply goals.

2.5 Updated PMP Manual Overview

The updated PMP Manual, like its predecessor, the 2007 PMP Manual, is a process and procedural document that provides long-term guidance for implementation of pipeline inspection, rehabilitation, and maintenance work and associated environmental documentation and permitting for this work. This subsection provides an overview of updated PMP Manual's contents, describes the use of the updated PMP Manual, and specifies activities that are not included in the updated PMP. Detailed descriptions of the activities and tasks included in the updated PMP Manual are presented in Section 2.5, and information about updated PMP implementation is discussed in Section 2.7.

2.5.1 Contents of the Updated PMP Manual

The updated PMP Manual is published with this PEIR and is incorporated herein by reference. The Draft Updated PMP Manual, provided in Appendix A, contains the following chapters:

- **Chapter 1, Introduction**: Describes the updated PMP vision, goals, and objectives and presents an overview of the updated PMP.
- **Chapter 2, Tasks and Activities**: Identifies the pipelines, facilities, tasks, and activities covered under the updated PMP, and also describes the environmental procedures and permitting used to carry out the work.
- **Chapter 3, Capital and Operations and Maintenance Activities**: Describes the capital and O&M project activities that are covered by the updated PMP.
- **Chapter 4, Responsible Parties**: Describes the key groups and positions of Valley Water employees who will have primary responsibility for implementing the updated PMP.
- **Chapter 5, Pipeline Process and Implementation**: Describes Valley Water's workflow process, which will be used to implement the updated PMP.
- **Chapter 6, Support Services**: Describes coordination with additional Valley Water units and offices that may be called on to provide supplementary support in implementing projects covered under the updated PMP.
- Chapter 7, Pipeline Inspection and Rehabilitation History and Progress: Describes pipeline construction and maintenance history.
- **Chapter 8, Program Evaluation**: Describes the process for adaptive management of the updated PMP.
- **Chapter 9, Program Environmental Review and Permitting**: Describes typical environmental review processes, permits, and agency review coordination that may be required for projects under the updated PMP.

The updated PMP Manual also includes several appendices that provide supplemental materials supporting this PEIR.

2.5.2 Applicability and Use of the Updated PMP Manual

The updated PMP Manual is intended to guide implementation of pipeline inspections and corrective and preventative maintenance activities to improve Valley Water pipeline O&M. Specific measures, protocols, and reporting requirements are identified in the updated PMP Manual so that all pipeline inspections and maintenance activities will be implemented in an efficient and environmentally sensitive manner.

Valley Water performs the same set of pipeline maintenance activities repeatedly throughout its system, although not necessarily on each pipeline each year. Specific maintenance activities on specific pipelines are expected to vary from year to year but have a consistent overall pattern in terms of work completed. Some future maintenance activities may be within Valley Water's jurisdiction and be consistent with the description of work and impacts evaluated for the updated PMP overall, while not specifically included in Valley Water's projection of work areas. Regardless, maintenance at such sites is intended to be covered by the updated PMP if

the maintenance activity generally is consistent with the O&M activities that are defined in the updated PMP Manual and would not result in significant environmental effects substantially different from those evaluated for the updated PMP as a whole.

If routine maintenance practices are changed substantially at any time, the updated PMP and PEIR will be reviewed and may be updated as needed.

2.5.3 Activities Not Included in PMP and/or Not Covered by PMP EIR

System Expansion

Any project that would include expanding the capacity of the raw, treated, or recycled water systems is not considered pipeline maintenance and is, therefore, not included in the updated PMP. System expansion would be more likely to involve new environmental impacts that are not evaluated in the PMP PEIR.

Emergency Repairs

Emergency repairs are exempt from CEQA under the State CEQA Guidelines (CCR Title 14, Division 6, Chapter 3) Article 18 Statutory Exemptions, Section 15269 Emergency Projects. Emergency projects, as defined by Article 18, include the following:

- Projects to maintain, repair, restore, demolish, or replace property or facilities damaged or destroyed as a result of a disaster where a State of California or federal State of Emergency has been declared
- Emergency repairs to publicly or privately owned service facilities necessary to maintain service essential to the public health, safety, or welfare
- Specific actions necessary to prevent or mitigate an emergency, not including long-term projects undertaken for the purpose of preventing or mitigating a situation that has a low probability of occurrence in the short term
- Projects undertaken to maintain, repair, or restore an existing infrastructure damaged by fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide

A situation is considered an emergency if it is "… a sudden, unexpected occurrence involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to life, health, property, or essential public services." (PRC Section 21060.3) Valley Water handles emergencies in varying ways, depending on the degree of the emergency. For acute emergencies that can be remedied by internal crews, emergency environmental compliance documents are to be signed by appropriate staff, and the Board of Directors is to be notified. Larger scale emergencies may be declared by the Chief Executive Officer and adopted by the Board for continuation, or the Board itself can declare an emergency.

Underground Pipeline Repair Under 1 Mile in Length That is Not Part of the PMP

Existing pipeline "repair, restoration, removal or demolition" that is less than 1 mile in length is covered under a Statutory Exemption, as defined in Section 15282 (k) of the State CEQA Guidelines and Public Resources Code section 21080.21 (provided that this is a standalone

activity and not part of a larger action). This exemption does not cover release of water but covers any related excavation. Other laws and regulatory requirements still will apply, as described in Section 2.8 of this PEIR. Standard best management practices (BMPs) from Valley Water's Best Management Practices Handbook (provided in Appendix C) and applicable measures would be implemented, to reduce any potential impacts on natural resources.

2.6 Activities and Tasks Descriptions

2.6.1 Activities Covered Under the Updated PMP Manual

The updated PMP Manual is designed to cover all the scenarios of maintenance in a methodical way, to streamline the environmental review for projects completed as part of the updated PMP. Two categories of maintenance activities—inspection activities and facility maintenance activities—are necessary to maintain proper pipeline facility and appurtenance function. Sub-activities that fall within these categories are as follows:

- Inspection Activities
  - External inspections
  - Internal inspections
- Facility Maintenance Activities
  - Buried and exposed pipeline component maintenance, including pipeline sections, valves, and fittings
  - Tunnel maintenance
  - Manhole, meter, vault, and related appurtenance maintenance
  - System instrumentation, controls, and monitoring
  - Backup generator maintenance
  - Pump station and facility maintenance
  - Storage tank and facility maintenance
  - Surge tanks & standpipes maintenance
  - Access road and support structure maintenance
  - Bank stabilization, erosion control, and energy dissipation device maintenance
  - Vegetation management

The following subsections describe the covered activities in greater detail. Section 2.6.2 discusses the types of work that typically are associated with each maintenance activity. Each of these inspection or maintenance activities would be completed through multiple tasks (i.e., by individual steps in completing the activity). Section 2.7.5 describes the tasks that would be necessary to complete the activities covered under the updated PMP. Table 2-2 summarizes the types of tasks that typically would be required to complete each activity. The activities and tasks descriptions have been updated to reflect current Valley Water practices; however, additions or changes may arise over the life of the updated PMP (such as implementation of new techniques or technologies). As described in Section 2.7.1, such activities may not be described explicitly in the updated PMP Manual, but they are intended to be covered by the

updated PMP as long as they generally are consistent with the covered activities and would not result in new significant environmental effects.

2.6.2 Activity Descriptions

Detailed descriptions for each activity listed in Table 2-2 are presented next.

Inspection Activities

Inspections would be needed to verify the operability of the pipelines or their associated facilities, and in many cases to determine what type of maintenance may be needed, based on conditions observed during the inspection. These inspections could be either external or internal (on the surface or outside a pipeline or facility, or inside a pipeline or other facility). Similar to the existing PMP, the vast majority of work implemented under the updated PMP would involve minor day-to-day routine inspection (non-ground-disturbing external inspections and internal inspections) activities, which are further detailed in the subsections below.

External Inspections

External inspections would involve physically examining the outside of a pipeline component. External inspections would include two types of external inspections—non-ground-disturbing and ground-disturbing external inspections.

Non-Ground-Disturbing External Inspections

The vast majority of external inspections would be non-ground-disturbing external inspections, which would be conducted on a regularly scheduled basis to inspect exposed or aboveground pipeline infrastructure (e.g., exposed pipeline segments, aboveground appurtenances such as valves). Non-ground-disturbing external inspections would not require the use of heavy construction equipment or vehicles or establishment of staging areas and would typically not require off-road access. These types of minor inspections would be completed by up to two crewmembers over 1 to 2 days.

Table 2-2: Updated PMP Activities and Tasks Matrix

	General Tasks			Pipeline Draining Tasks			Maintenance and Repair Tasks		
	Setup, staging, and access	Control of hazardous energy (Lock-out/tag-out)	Pump-out of vaults/ manholes	Isolation	Dewatering	Refilling	Excavation, backfill, construction, and other ground disturbance	Repair of pipeline system infrastructure	Non-ground-disturbing repair
Inspection Activities									
External inspections (non-ground-disturbing)[a]	x								
External inspections (ground-disturbing)	x	x	x	x	x		x		
Internal inspections	x	x	x	x	x				
Facility Maintenance Activities									
Buried and exposed pipeline component maintenance, including pipeline sections, valves, and fittings	x	x	x	x	x	x	x	x	
Tunnel maintenance	x		x	x	x	x	x	x	
Manhole, meter, vault, and related appurtenance maintenance	x	x	x	x	x	x	x	x	x
System instrumentation, controls, and monitoring maintenance	x	x	x	x			x		x
Backup generator maintenance	x	x					x	x	x
Pump station and facility maintenance	x	x	x	x	x	x	x	x	x
Storage tanks and facility maintenance	x	x	x	x	x	x	x	x	x
Surge tank maintenance	x	x	x	x	x	x	x	x	x
Access road and support structure maintenance	x	x	x	x	x	x	x		x
Bank stabilization, erosion control, and energy dissipation device maintenance	x				x		x		
Vegetation management	x				x		x		x

[a] Non-ground-disturbing external inspection tasks would typically be limited to access.

Ground-Disturbing External Inspections

Ground-disturbing external inspections (e.g., potholing/geotechnical studies, exposure of buried pipelines or infrastructure) would be required to inspect underground pipeline infrastructure and surrounding soils and may require the use of heavy construction equipment and vehicles, establishment of sediment stockpiling and staging areas, and off-road access. These types of external inspections would be completed by up to five crewmembers over 3 to 5 days.

Internal Inspections

Internal inspections would be necessary to check the integrity of all internal parts and appurtenances of a pipeline and could be done by manned inspection or using disinfected special equipment, such as remote-controlled or hand-fed, closed-circuit television (CCTV) camera probes. Other types of internal inspections could include magnetic flux and electromagnetic inspections. For water tanks, if a diver is used, they would follow the industry standards set by the American Water Works Association (AWWA) that outline recommendations for divers in potable water facilities such as AWWA C652 (Disinfection of Water Storage Facilities) and AWWA D101-53 (Inspecting and Repairing Elevated Steel Water Storage).

During manned pipeline inspections, a crew of two to three people typically would be required. If the pipeline is large, multiple crews may be used. Dewatering, as described in Section 2.6.3, would be completed in advance of manned inspections. Confined-space safety protocols would be required for entry into pipelines, vaults, and manholes. Inspections usually would last from 1 day to 2 weeks. Access would be minimally disturbing and may involve off-road setup and staging.

Facility Maintenance Activities

Age, wear, corrosion, leaks, and integrity loss from seismic activity and other natural geologic processes all contribute to degradation of the systems over time. Preventative and corrective maintenance are required for adequate system functionality and safe, reliable water delivery. Several different maintenance activities would need to be performed at the facilities, both on a defined schedule as preventative maintenance and on an as-needed basis as corrective maintenance. Some of these activities would be minor, while others could be larger undertakings that, while requiring a more robust internal design and approval effort, still would be considered maintenance, and thus would be covered under the updated PMP. Descriptions of each facility maintenance activity are presented next.

Buried and Exposed Pipeline Component Maintenance, Including Pipeline Sections, Valves, and Fittings

Maintenance of pipelines and their direct appurtenances is critical for reducing water loss, maintaining safe operations, and ensuring pipeline integrity. This includes regular maintenance of valves, fittings, pumps, motors, and other mechanical components. Valves typically would be exercised annually, to verify their full operability, not only for typical operations but also in emergencies. Appurtenances may be buried or located in vaults or in manholes. The installation

of new appurtenances would be covered by the updated PMP because this could improve O&M. However, new appurtenances that would expand the system capacity would not be covered under the updated PMP. Various pipeline maintenance activities may be performed, such as interior lining repair, joint repair, slip lining repair, and pipeline section replacement, using trenchless methods, open-pit excavation, or within the pipeline. Cathodic protection systems also may be installed during pipeline maintenance activities, for long-term pipeline protection.

Tunnel Maintenance
Appurtenances or monitoring equipment may be placed or replaced within the tunnels. Tunnel relining and/or extensive tunnel liner repair and/or replacement would be covered under the updated PMP. The replacement or installation of new tunnels would be a major action, requiring a separate environmental evaluation, and this would not be an activity included in the updated PMP.

Manhole, Meter, Vault, and Related Appurtenance Maintenance
This maintenance activity would cover structures that provide access to pipeline components, including manholes, vaults, and meter pits. These structures could be aboveground or belowground and house pipeline appurtenances such as valves, meters, and monitoring equipment. Dewatering may be required for partially submerged structures. Replacement of manholes or vaults may require ground disturbance but abandoning them in place could reduce such disturbance. Water meter maintenance, repair, and replacement also may be necessary. Aboveground features, such as pipeline markers, standpipes, and equipment boxes/covers, also would be maintained with minimal ground disturbance under the updated PMP.

System Instrumentation, Controls, and Monitoring Maintenance
Monitoring equipment or wires may be buried, inside pipelines, vaults, or manholes, or at pole-mounted lock boxes. The operation of these systems would rely on maintaining a communication infrastructure network that could include wireless and wired electrical components. Maintenance would include repair and replacement of field instrumentation and their enclosures, such as sensors, monitors, and field controllers, remote terminal units (RTUs), and programmable logic controllers (PLCs). The RTUs and PLCs would collect, and compile data supplied by field instrumentation.

Backup Generator Maintenance
Maintenance of existing generators and associated facilities would be covered under the updated PMP. Generators would improve O&M by providing critical backup power for pumps and other vital electrical equipment. Installation of up to 20 new generators, which may also require a new concrete pad, would also be an updated PMP-covered activity, because this would not expand system capacity. As with existing generators, the new permanent backup generators would be installed within sound-attenuating enclosures to meet local noise ordinances.

Pump Stations and Facility Maintenance
The pump station facilities would require maintenance to verify protection of the housed components. This would include the physical walls, entryways, ceilings, and foundations. Pump replacement would be an updated PMP-covered activity if it would not expand conveyance system capacity. Other drives and flow control devices also would be covered under the updated PMP. These would include components such as adjustable speed drives (ASDs), which typically are on the interior of pump station buildings and commonly are replaced at the time of pump replacement.

Storage Tanks and Facility Maintenance
Maintenance of storage tanks would include replacing appurtenances such as locks, ladders, hatchways, pressure gauges, telemetry, vents, overflows, mixing devices, baffles, flushing, and internal cleaning. Methods for cleaning may require draining the tank for entry; however, some tanks may accommodate submerged entry. Inspection would be completed by human entry or a remote-operated vehicle (ROV) equipped with CCTV. Repairs also could include external tank painting or internal tank and concrete foundation repair.

The above-mentioned water tank appurtenances may require replacement; however, the water tank itself also may need to be replaced. Water tank replacement would be a covered activity if this would not expand conveyance system capacity. Water storage tank materials and technologies may be upgraded if system capacity remains consistent.

Surge Tank Maintenance
Surge tanks have various components that may need repair or replacement, including the pressure gauge, pump, switches, and connectors. Maintenance could include repair, replacement, or installation of a new surge tank. Installation of a surge tank would not expand conveyance system capacity, and thus would be covered under the updated PMP.

Access Road and Support Structure Maintenance
Valley Water maintains various access roads and small structures that support water conveyance system pipelines. Road repair could involve grading, paving, and trucking in gravel as well as restabilizing access roads to vaults. Fencing, gates, and security structures associated with access roads and areas surrounding water system infrastructure also may need maintenance for increased security or public safety. This maintenance could include increasing fence heights or installing cameras and/or alarm systems. Systems such as French drains, or other green infrastructure providing similar benefits, may be installed to reduce ponding and runoff erosion. These drains typically would consist of a shallow trench filled with gravel or rock and a perforated pipe at the bottom of the trench.

Bank Stabilization, Erosion Control, and Energy Dissipation Device Maintenance
Bank stabilization and erosion control devices would be installed along access roads, near dewatering points, along stream embankments, and other features subject to runoff and erosion. Maintenance of energy dissipaters or hardened embankments may be required to prevent erosion. In addition to maintenance of those features, they also could be removed or

decommissioned. The design of a particular bank protection project would include evaluation of other site-specific characteristics, such as bank slope, shear stress, locations (inside versus outside a curve), soil type, flow velocity and anticipated flow velocity from releases, and channel characteristics. Erosion and/or scour issues could occur along pipeline sections because of deteriorating upland and stream conditions. In these areas, it may be necessary to remediate these issues to prevent ongoing and worsening erosion and/or scour along the affected pipeline sections.

Vegetation Management
Year-round, Valley Water conducts various vegetative maintenance activities to maintain its facilities, access points, and water sources. Vegetative maintenance increases worker and public safety as well as wildfire prevention. Vegetation maintenance also decreases habitat for dangerous vectors, such as spiders, snakes, and ticks, thereby increasing worker safety. This activity is vital to reduce fire fuels. In addition to mowing and general ground clearing for setup, staging, and access, examples of work completed under this activity may include the following:

- Stump grinding
- Cut stump herbicide treatment
- Hand-pulling weed abatement
- Mechanical weed abatement
- Pre- and post-emergent herbicide application
- Fire break installation
- Pruning and limb removal
- Tree and shrub removal
- Removal of vegetation (not mow-able)
- Goat grazing
- Steaming

Additional vegetation maintenance activities not listed above also may be included in the updated PMP if the tasks related to the work would be the same.

2.6.3 Task Descriptions

Overview
Each Inspection or Facility Maintenance activity would be completed through a set of common tasks as referenced in Table 2-2. These tasks would be the core of the updated PMP. The general procedures, schedules, and required equipment are described for each task. These descriptions are not meant to be all-inclusive but rather to provide a framework for evaluation.

Because of the diversity and complexities of the various raw, treated, and recycled water conveyance systems and their components, variations in approach to activities by trained staff are anticipated. Any variation requiring tasks not covered under the updated PMP would exclude the activity from being covered by the updated PMP.

Program tasks discussed next would generally occur during daytime hours, Monday through Friday. However, on limited occasions, extended nighttime construction work hours or work on Saturdays may be required to reduce impacts on traffic, minimize water service disruptions, or respond quickly to infrastructure requiring urgent repairs.

General Tasks

Setup, Staging, and Access

Procedure

Wherever possible, Valley Water would use previously disturbed areas, such as paved or gravel parking lots and roads for setup, staging, and access. Before the start of work, staging (if required) and access locations and activities would be determined by Valley Water staff. Staff also would identify applicable BMPs and program-specific avoidance and minimization measures (AMMs) described in Section 2.7.1 and Section 2.7.4, respectively below, and traffic routes to be used. Any required equipment and fuel would be stored in secured staging areas. Certain sensitive settings may require 24-hour security. Examples of common site preparation would include vegetation trimming or removal and application of gravel to the area. Off-road vehicle access sometimes would be necessary to access pipeline structures and appurtenances not located along existing roads or access trails. In such cases, the number of vehicles and equipment would be minimized and travel would be limited to established access roads and trails to the extent feasible.

Project-specific work orders would detail the necessary staff and equipment for the activity. Site access would be determined during project design. The preferred route of travel would be defined to avoid sensitive resources. Use of specialized vehicles, to lessen impacts, may be implemented. If sensitive resources are identified, a qualified biologist would stake the route in areas of sensitive resources.

Land Entitlement. On rare occasions, Valley Water's program pipelines or facilities originally were constructed without formalizing easement, ROW, or other land entitlement agreements with landowners. Regardless, as asset owner and operator, Valley Water currently accesses and maintains such infrastructure on a routine basis, through informal coordination and agreements, and these maintenance activities would continue under the updated PMP. To formalize Valley Water's access rights for future maintenance, Valley Water would obtain easements or other land entitlements for program facilities under the updated PMP. Valley Water occasionally may also identify a need for additional land acquisition, ROW, and/or easements to facilitate pipeline systems maintenance (e.g., for access roads or rerouting vent pipes for air valves). All updated PMP-covered activities could include land entitlement work that would be applied on or near existing pipeline infrastructure. Land entitlement work would occur on an as-needed basis and is not expected to be required frequently. Land entitlement tasks would be administrative only and would not cause any physical impacts, and these land entitlement tasks would not alter existing or future maintenance and rehabilitation work for program facilities.

Schedule
Setup, staging, and access routes and areas typically would be used for the duration of the project. Local noise ordinances may stipulate the hours in which these areas may be occupied and used.

Staff and Equipment
Staff and equipment necessary for staging would depend on the activity. Typical Valley Water maintenance crews would consist of one to six people. Equipment may include worker trucks, dump trucks, backhoes, loaders, skid-steer loaders, excavators, water trucks, and cranes. Project-specific work orders would detail the necessary staff and equipment for the activity.

Control of Hazardous Energy (Lockout/Tagout)
Procedure
Valley Water would implement a lockout/tagout procedure so that staff and contractors would be safe from hazardous energy releases during maintenance activities The procedure would involve a designated employee turning off and disconnecting machinery or equipment before maintenance begins. The employee would lock or tag the energy-isolating device, to prevent hazardous energy release and verify that it is isolated effectively. Lockout/tagout would be performed before and after the work by designated Valley Water staff only.

Schedule
Lockout/tagout would occur before the start of work and would be removed after completion by designated Valley Water staff only.

Staff and Equipment
A designated Valley Water employee would perform lockout/tagout.

Pump-Out of Vaults/Manholes
Procedure
Vaults and manholes would require periodic cleaning, to verify a safe environment for worker access and reduce corrosion of equipment. The vault or manhole would be accessed and hosed down, to clean off debris. Water that may have accumulated in the vault from surface or groundwater infiltration, as well as water supplied by the hose, then would be pumped out according to the sump/vault pumping procedure described in the updated PMP Manual. Although the water typically would contain organic material, the procedure would provide guidelines for addressing parameters of concern, such as for potential contamination via visual and scent observations. The procedure would be followed for all pump-outs.

Schedule
Pump-out typically would take less than 1 hour and often less than 15 minutes.

Staff and Equipment
Pump-out of vaults and manholes typically would require at least two staff and two trucks. A pump would be used to lift the water from the vault. Depending on the vault or manhole, confined-space safety protocols may be necessary for entry. For work performed in streets,

additional traffic control equipment and devices would be used to alert drivers and divert traffic.

Pipeline Draining and Refilling Tasks

Isolation

Procedure

Isolation of pipeline sections would be used for activities requiring pipeline draining. Before any section of pipeline is isolated, Valley Water would complete an internal process to authorize the opening and closing of appropriate valves for pipeline isolation. Valve opening and closing could be controlled remotely at the appropriate supervisory control and data acquisition (SCADA) center or manually in the field. If valves are operated manually, Valley Water maintenance staff would be on site to operate the valves, and confined space safety protocols may be necessary for valves in vaults or manholes. The section of pipeline to be isolated would depend on the work to be done, and combinations of isolation valves may be used to drain a larger portion of the pipeline.

Schedule

Isolation of pipeline sections would be used to facilitate activities requiring pipeline draining. This typically would be performed remotely and take only minutes but could take longer, depending on the number of valves needed to isolate the pipeline section. If the valves have to be operated manually in the field, Valley Water maintenance staff would mobilize to the site for the manual operation. Valves contained in vaults or manholes may require confined-space safety protocols before entry.

Staff and Equipment

A qualified staff member would perform isolation of pipeline sections, either manually or via SCADA.

Dewatering

Procedure

Isolation. Refer to the Isolation Procedure, above.

Dewatering. Valley Water's pipelines are equipped with components, such as vaults, turnout piping, pump-out risers, and blow-offs, enabling the drainage of specific sections of the pipelines. The valves would be closed to redirect water from the main pipeline to flow to the surface pipeline release point, which could vary in design, structure, and location, depending on the type of water being released. The dewatering procedures and the types of receiving points to be used would depend on the system and water type, while additional requirements or limitations also may apply, depending on the receiving water body. The gravity flow method would be used first, followed by pumping out the pipelines using pump-out locations at low points in the pipeline profile, using pumps that would vary in capacity. Pump capacities could vary, but typically would range from about 3 cubic feet per second (cfs) to 11 cfs.

The amount of water released during dewatering would depend on the season, length of pipeline requiring isolation, topography of the pipeline, and the volume and velocity of water that could be released into the recharge facilities or turnouts. Flow rates would be adjusted to minimize scouring and the effects of rapid water-level increase and decrease. Flow rates would be controlled manually out of gravity flow blow-offs by controlling valves, and the area would be adjusted accordingly to maintain compliance with applicable BMPs and AMMs. Underground and aboveground energy dissipaters also would be used to reduce the velocity of the released water in certain areas, and the release rate gradually would be increased to prevent the buildup of water in streams, rivers, or canals and avoid scouring of the channel bed and ground surfaces.

Turnouts would be used for raw water releases only; such releases are permitted under Valley Water's Statewide Discharge Permit, issued in December 2015. Raw and treated water also may be discharged to local waterways, but treated water must be dechlorinated before release. Storm drains and urban drainage channels also could be used for raw and treated water, but again, treated water must be dechlorinated before release. For recycled water pipelines, release typically would be into existing sanitary sewers, which would require prior approval from the local authority that owns the system. Recycled water would need to meet certain quality requirements before release, and additional requirements may be stipulated to comply with National Pollution Discharge Elimination System (NPDES) permits.

Other recycled releases. Recycled water is defined as water which, because of treatment of waste, is suitable for a direct beneficial use or a controlled use that otherwise would not occur, and therefore is considered a valuable resource. Valley Water operates its recycled water conveyance system in accordance with applicable regulations, including the Uniform Statewide Recycling Criteria (Uniform Recycling Criteria) and recycled water General Order (Order WQ 2016-0068-DDW). The General Order is the primary method by which regional water boards permit recycled water distribution and use (not treatment). Dewatering for O&M would be directed to the sanitary sewer system for appropriate disposal and treatment. Other types of water reuse may be approved, such as for dust control, firefighting, hydrostatic testing, and other short-term or infrequent applications. The updated PMP Manual describes recycled water policies that would apply to Valley Water's maintenance of pipelines and appurtenances.

Visqueen spillways. When release points are lacking existing discharge infrastructure or adequate discharge infrastructure, installation and removal of temporary structures would be used to create "Visqueen spillways" at release points. These structures would include hoses, wattles, and/or sandbags, Visqueen sheeting, geotextile fabric bags, flow-directing fish screens, or block nets. The structures would be put in place to minimize erosion.

Groundwater. When excavation would be required for inspection or maintenance activities, groundwater could be encountered. The groundwater would be pumped out according to procedures outlined in the updated PMP Manual and would be tested and treated if required. Groundwater also may infiltrate pipelines and vaults, requiring dewatering before O&M

activities. Water also could infiltrate pipelines and vaults through blowoffs. When water is encountered this way, dewatering would follow the same procedure as described above.

Treatment before release. Raw, treated, and recycled water types have differing requirements for treatment before being released, depending on location and type of release.

Raw water. Raw water can have algal growth. To control algae, the State Water Resources Control Board occasionally adds copper sulfate to some of the raw water supplied to Valley Water in summer months. The amount of residual copper has been studied and is believed to be insignificant and not a pollutant of concern during dewatering (Water Utility Operation and Maintenance Pollution Prevention Work Group and Valley Water 2016). Raw water releases for maintenance typically would be done in winter. No treatment would be needed for raw water before dewatering.

Treated water. Treated water must be dechlorinated before any type of release. A dechlorination chemical would be added to the water to remove residual chlorine before effluent is dispersed into the receiving environment. Dechlorination could be performed on site with mobile units.

Recycled water. Recycled water contains disinfection chemicals and slightly higher concentrations of dissolved solids, ammonia, and nitrites than treated potable water (SCVWD 2016). For releases to be used or transported for non-potable uses (e.g., irrigation, construction, fire suppression, hydrostatic testing), the recycled water General Order would apply. The State of California Recycled Water Regulations provide water quality parameters for other recycled water uses, such as dust control, concrete mixing, soil compacting, or cleaning roads, sidewalks, and outdoor work areas, for which infrequent recycled water releases may be used. These types of uses would require recycled water of at least disinfected secondary-23 recycled water quality, a standard of total coliform bacteria concentration. Water quality testing for secondary-23 water is outlined in the State Recycled Water Regulations and includes daily coliform sampling.

The recycled water General Order does not apply to treatment of wastewater before releases to a sanitary sewer. The authority that owns the sanitary system and the wastewater treatment plant that processes the inflow may stipulate additional treatment requirements before sanitary sewer releases.

Water quality testing. Water quality testing would be performed for all release types. Depending on the type of water being released and point of release, testing may include chlorine residual, turbidity, dissolved oxygen, temperature, and pH. Valley Water staff and/or subcontractors are trained to complete water quality bench tests that provide quick results in the field. The specific requirements for water quality testing would be situational and determined by the applicable permit, BMP requirements, and mitigation measures. Recycled water releases have specific testing requirements, tied to the receiving authority's permits. Water quality testing would be performed actively during all releases, to verify that the released water quality is within acceptable parameters for the type of release. Operational decisions would be made on site, based on the active water quality sampling.

Implementation of applicable BMPs and AMMs may be documented through standard operating procedures or field data collected (e.g., the State Drinking Water System General Permit requires water utility agencies to log the measures implemented for planned potable water discharges) (Water Utility Operation and Maintenance Pollution Prevention Work Group and Valley Water 2016).

Schedule

Total drainage time would depend on the released water volume and the flow rate at which it is expelled. Releases could last from a few hours to a few days. Property owners, irrigators, retailers, and stakeholders would be notified of pipeline shutdown dates and duration. Valley Water personnel would coordinate with property owners, cities, and special districts, to prepare for maintenance work and describe how that work may affect other land use operations.

Staff and Equipment

A valve operator and a maintenance crew would be required to monitor the release. Portable generators, pumps, and Valley Water vehicles may be necessary.

Refilling

Procedure

The disinfection and refill procedures for pipelines are critical for the safety and quality of water supply for the public. Flushing pipelines would be the first step to remove any debris from the pipelines. After the pipelines are flushed, they would be refilled and pressure tested, following standard Valley Water procedures. Treated water pipelines would be disinfected after pressure testing, using a high concentration of sodium hypochlorite for disinfection. Before, during, and after the disinfection process, both normal chloramine residual and high chlorine water would be dechlorinated and then released to an approved location while being monitored against water quality criteria. The dechlorination system at the release points would eliminate both the normal chloramine residual and the high free-chlorine residual before the water is released. The disinfection process would be complete when bacteriological samples verify that it is effective, and the pipeline would be returned to service.

Schedule

The refilling schedule would depend on the season and the size of the pipeline to refill. Refilling could take hours to days, depending on the type of water and required bacteriological testing results.

Staff and Equipment

Small crews of one to five people would be responsible for installing blind flanges, replacing manhole covers, and closing valves. Equipment typically would consist of a truck to replace manhole covers. Additional crew members would be required if disinfection and dechlorination is needed.

Pipeline System Infrastructure Maintenance and Repair Tasks

Excavation, Backfill, Construction, and Other Ground Disturbance

Procedure

Pipelines and pipeline components. Excavation would occur after identifying a segment of pipeline or an appurtenance requiring maintenance or repair. Excavation typically would be performed if internal pipe repair is not an option, or for appurtenances that require excavation for maintenance activities.

When excavation is determined necessary, survey crews would identify and mark the limits of the project ROW around the area to be excavated. Excavation for geotechnical studies may be required to determine the physical and chemical components of the soils surrounding the pipeline, to inform pipeline maintenance and/or repair project design, and to identify appropriate soil and groundwater disposal options for pipeline repair and maintenance activities. If necessary, the area would be cleared of debris or vegetation. Backhoes or excavators would be used to excavate around the existing pipeline, vault, or access road. Excavated spoil material would be stored within the ROW during the maintenance activity or hauled to staging areas. Pipelines would vary in depth, with an average of about 5 to 6 feet below the ground surface. Hand-digging would be performed around the pipeline or appurtenance, to prevent damage from heavy machinery. Valley Water's Health and Safety Unit would comply with all applicable Occupational Safety and Health Administration (OSHA) regulations for excavation and trenching.

After maintenance work is performed, the excavation typically would be backfilled with the same excavated material or, in some cases, backfilled with imported backfill soils, rock, or gravel. If imported backfill is used, then the excavated spoils would be removed from the site, tested, and properly disposed. Permitting, management, testing of all soil, transportation, and disposal of all regulated material encountered on site shall be performed in accordance with applicable local, State, and federal regulations and program BMPs and AMMs. Soil may be disposed of at state permitted landfills, on Valley Water-owned sites, or at other approved locations. The ROW would be returned to its original contours and grade or to the designed project lines and grades. Where appropriate, the disturbed soil would be stabilized by seeding in the appropriate season with an approved weed-free native mix, and erosion and sediment control measures would be implemented in accordance with applicable BMPs, AMMs and VHP conditions, as described further below.

Whenever possible, excavation in wetland and riparian areas would occur during the dry season (July 1 to October 15). If waterways contain flowing water, diversions may be necessary. The width of the area disturbed at drainage crossings would be minimized to avoid affecting more of the drainage than necessary to complete the work.

Erosion and sedimentation BMPs and AMMs would be implemented and maintained throughout excavation. BMPs and AMMs often include devices such as sedimentation barriers (e.g., straw bales, silt fences), to contain suspended soil on site. If rain is forecasted during excavation, sedimentation barriers would be installed and maintained across the ROW and

above the drainage. These devices would remain in place until the excavated area is stabilized, and vegetation becomes established.

Before any excavation operations are initiated, a complete photographic history would be taken of the site and surrounding buildings. Post-excavation photographs would be taken to document the level of disturbance and any changes in the appearance of the environment.

Access roads and support structures. Excavations of various sizes also would be needed to maintain access roads. Typical activities would include filling potholes for drainage and erosion control, shoulder and slope repair, support structure repair, or re-graveling existing access roads. Access road excavations could be very small, to repair a pothole or shoulder slump, or involve larger linear excavations to perform maintenance on culverts, drainage ditches, or slope failures for elevated access-road fills. Gate and fence maintenance also may require minor excavation activities. Procedures for access road maintenance would be the same as those discussed above. Erosion control measures also would be applied as discussed above.

Bank stabilization, erosion control, and energy dissipation devices. Water releases could have high-velocity flow, which could cause erosion. Bank protection work would occur before a planned release in areas where banks that appear to show signs of erosion or instability are within 50 feet of the discharge point. Additionally, non-Valley Water infrastructure, such as box culverts associated with stormwater runoff conveyance along roadways, could also cause erosion that exposes adjacent Valley Water pipeline infrastructure. Bank protection work would occur at the point of erosion to ensure protection of Valley Water infrastructure.

The extent of existing erosion around a release point would depend on several factors, including the following:

- existing bank substrate (vegetated versus earthen)
- slope and stability of the bank/geotechnical considerations
- natural and human-made erosion forces at the site (e.g., storm events, development, farming)

Bank stabilization before pipeline draining may be necessary in some areas, so that no significant erosion occurs during the activity. A typical permanent bank protection project would replace temporary bank protection measures, such as using geo-bales and fabric with concrete curbs and aprons. The intent would be to capture and direct flow to the area protected by the concrete. This apron would be extended downward, past the normal winter high-water mark, to avoid erosion at the interface between the concrete and channel bottom. The typical size of a bank protection project would be approximately 25 feet long by 10 feet deep on either side of a channel.

Bank protection for dewatering-point stabilization could include installation of hard structures (e.g., rock blankets, concrete, sack concrete, gabions). Preference would be given to incorporation of plantings that would serve a dual purpose in providing habitat as well as reducing erosion. Where hardscape would be necessary, protection measures could include the following:

- Gabions (not used in salmonid streams)
- Rock blankets (including larger riprap with small rock fill)
- Sacked concrete
- Articulated concrete mats

Of these methods, preference would be given to rock blankets, particularly in areas of high habitat value. Plastics would not be used for any permanent bank stabilization installations. The number of bank protections that would need to be performed would depend on the pipelines being drained and the condition of the banks at the release point. The type and location of necessary bank protection would be determined in spring, before the scheduled fall and/or winter pipeline draining effort. Site-specific installation of synthetic cellular confinement may be used to reduce erosion temporarily during dewatering and would be removed after completion of dewatering activities.

The design of a particular bank protection project would include evaluation of other site-specific characteristics, such as bank slope, shear stress, locations (inside versus outside a curve), soil type, flow velocity and anticipated flow velocity from discharge, and channel characteristics. Bank stabilization methods and the basis of design would be included in project plans.

Vegetation Maintenance. Maintenance of vegetation sometimes can cause ground disturbance. Valley Water conducts year-round vegetation maintenance along streams, around water conveyance structures and components, and at access points to support initiatives such as invasive species management, stream maintenance, public safety, and fire management. Activities and implementation schedules would be reviewed by Valley Water biological resources staff and coordinated with appropriate internal working groups and plans (e.g., Integrated Invasive Plant Management Plan) before application.

Tree removal and limbing may be required to improve vegetation health, mitigate safety hazards, and maintain access to pipelines. Certified arborists would identify trees for removal. Complete tree removal, stump grinding, and re-grading the land may be necessary to reduce erosion potential. Valley Water BMPs, including the Nesting Bird Policy and erosion control measures, would be implemented to reduce impacts and restore disturbed areas.

Mowing is a mechanical treatment and would be one of the most frequently used vegetation maintenance activities. Mowing would be used to maintain access points, minimize woody plant growth, and promote desirable vegetation. Mowing could be completed by a single crew member, using a pickup and a trailered mower.

In addition to mowing and other mechanical removal, non-mechanical vegetation maintenance measures also may be used. These may include hand-pulling weed abatement, pruning and limb removal, removal of vegetation (not mow-able), goat grazing, and steaming.

Herbicide application may be appropriate for pre- and post-emergent weed abatement and prevention of unwanted tree re-growth on a cut stump. Herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Consistent with Valley Water's standard practice, herbicides would be applied by staff who hold a Qualified Applicator License issued by the California Department of Pesticide Regulation and are trained in plant identification. Furthermore, Valley Water's general BMPs addressing herbicide application would be followed for all treatments.

Schedule

Pipelines and pipeline components, and access roads and support structures. The duration of time necessary for work would depend on the length of the segment that needs to be excavated. Work generally would be completed within a few weeks. If excavation is necessary for leak repair, it could occur at any time. A severe leak that compromises system pressures and/or Valley Water's ability to provide safe, reliable water may require emergency repair and would not be an updated PMP activity. Excavations for pipeline draining that require pipeline shutdowns typically occur in winter. Other excavations, such as for road maintenance or telemetry systems, would occur during the dry season (May 1 through October 31). Blow-off valve repair in stream banks and bank protection measures would be performed between July 1 and October 31, when water levels in streams would be lowest. Reclamation and reseeding of disturbed areas usually occur in late fall, before the rainy season begins.

Bank stabilization, erosion control, and energy dissipation devices. Bank protection projects generally occur in the dry season, between July 1 to October 1. The average duration of a bank protection project would be 5 to 7 working days.

Vegetation Maintenance. Vegetation removal could occur throughout the year, as needed for safe access and maintenance of facilities.

Staff and Equipment

Pipelines and pipeline components, and access roads and support structures. Excavation usually would involve a small crew of two to 10 people but could require a larger crew in some cases. Equipment would include flatbed delivery trucks, water trucks, backhoes, excavators, compactors, sump pumps, shoring equipment, and loaders/dozers.

Bank stabilization, erosion control, and energy dissipation devices. Equipment for bank protection may include excavators, dozers, loaders, dump trucks, concrete trucks, pumps, and water trucks. If water is required to be diverted around the site during construction, water pumps and piping also may be used.

Vegetation Maintenance. Vegetation maintenance crews would average two to five people but would vary, depending on the size of the treatment area. Vegetation maintenance tools may range from chainsaws and rakes to large machines, such as bulldozers and woodchippers. Crews and equipment would be transported by truck, and equipment would be stored in an established staging area.

Repair of Pipeline System Infrastructure

Procedure

Overview. This task would include direct pipeline repairs as well as repairs to system components, such as backup generators, manholes, meters, vaults, storage tanks, pump stations, and surge tanks.

Pipeline-specific repair activities would depend on the results of the inspections and the pipeline or component and would include both internal and external maintenance. Repair to pipelines could include applying cement-mortar grout at joints or locations where linings are damaged, installing Weko (rubber-type) seals, welding joints, and replacing valves. Internal pipeline repairs would require discharge as described above. Some examples of maintenance activities to be performed under this task are highlighted next.

Replacing valves. Valves would be replaced if they have demonstrated leaks or failure or no longer open or close. The replacement methodology would depend on the type of valve. Valves generally are scheduled for replacement at a frequency of once every 25 years for 2-inch and smaller in diameter valves, and once every 33 years for valves larger than 2 inches in diameter. The procedure would include complete removal and disposal of old valves and installation of a new valve, according to manufacturer specifications. Valve replacement could occur during in-pipe or external repair. Excavation sometimes would be necessary to do repair work. If proper isolation is not available, discharge would be required. Used parts and waste from repair may be transported to Valley Water pumping plants for disposal, or the contractor may dispose them directly.

Replacing pipeline sections. Occasionally, sections of the pipeline would need to be replaced. Replacement would involve excavation and removal of the existing pipeline section. Procedures for placing the new pipeline sections would depend on the type of pipeline material but generally would consist of joining the pipe, coating or wrapping the pipe at joints; testing for leaks before backfilling; and adding backfill, cathodic protection (for steel pipes), and electrical insulation of dissimilar metals if required. Replacement or repair of pipeline sections under 1 mile in length and within a public ROW would be exempt from CEQA (California Public Resources Code Section 21080.21). The CEQA exemption is limited to subsurface facilities and does not include repair or replacement of surface facilities related to the operation of the underground facilities; however, such activities would be covered by the updated PMP.

Installing new appurtenances. Although the pipeline systems are operated and maintained, occasionally new appurtenances would be added to the system to improve existing O&M capabilities for more reliability, such as adding new valves, vaults, flowmeters, or monitoring

systems. Installing new appurtenances could be associated with repairing pipelines or existing appurtenances. Adding new appurtenances would not increase or expand the system capacity.

Schedule

The repair schedule would be highly dependent on the extent of repairs for the segment of pipeline or water system component under evaluation. Typical open-trench pipeline repairs would be completed in 1 to 2 weeks. Air release valves would be serviced approximately every 6 months, with repair work typically requiring about 1 week depending on the extent of repairs to be performed.

Staff and Equipment

The number of required crew members and type of equipment needed for repairs to backup generators, manholes, meters, vaults, storage tanks, pump stations, and surge tanks would vary, depending on the task. Repair work may require specialized plumbing or electrical subcontractors. For maintenance of water tanks, dive crews may be required (similar to inspection activities). If a diver is used, they would follow the industry standards set by the American Water Works Association, outlining recommendations for divers in potable water facilities. Specialized equipment may be required for a large pump removal/replacement and a vault or manhole replacement.

For pipeline-specific repair, three crew members typically would be used for in-pipe repair, and this work may be subcontracted. Valley Water's Utility Maintenance Unit provides pipeline ventilation and confined-space entry, and Valley Water's Environmental Health and Safety Unit enforces all applicable OSHA regulations. Equipment would include hand-held maintenance tools, ventilation fans, and welding torches. Workers also would use specialized confined-space equipment.

For repair of air release valves, routine preventive maintenance would require at least two crew members and usually two trucks. For work in streets, an additional truck with a lighted signboard would be used if traffic is a concern.

Non-Ground-Disturbing Repair

Procedure

Overview. Water conveyance system maintenance activities would be conducted regularly with minimal ground disturbance. Maintenance and replacement work may involve aboveground pipeline features, such as pipeline markers, standpipes, and equipment cages/boxes. Larger features, such as backup generators, uninterruptible power supplies, pump stations, storage tanks, and surge tanks, also may require maintenance and replacement, which could be conducted without ground disturbance. These activities typically would be performed on existing equipment within the current infrastructure, and if required, new appurtenances also could be installed on the existing pipeline infrastructure if they do not increase the system's capacity.

Backup generators. Backup generators would be tested routinely and inspected to verify their readiness in case of an emergency. Backup generator maintenance may include work on the fuel

system, equipment pad, fuel piping, transition sumps, leak containment, alarm panel, instrumentation, or electrical controls. Lighting and security equipment also may be installed or maintained. Vegetation maintenance may occur around generator facilities. Sound attenuation would be important, to minimize noise disturbance to both the facility and potential sensitive noise receptors. All generators would be outdoor-rated and sound-attenuated to restrict noise. Similar to existing generators, Valley Water would install backup generators within noise-attenuating enclosures, having steel panels that would be equipped with acoustic barriers, sound-absorbing insulation on interior panels, and exhaust mufflers to ensure that generator noise would not exceed the allowable noise levels set forth by the local jurisdiction.. All portable and stationary backup generators that are used by Valley Water are fully licensed/permitted by the air pollution control district.

Pump stations. Regular maintenance would be required in any moving part of the pump, and repairs may be required to any of the regularly inspected components, based on oil level and condition, noise and vibration, bearing temperatures, leaks from the pump housing, leaks from pipe connections, cracks in pipes or hoses, discharge pressure, intake pressure, seal integrity, and operating temperature. Electrical and instrumentation repairs may be required as well as repairs to the structure housing the pump.

Water tanks. Water storage tanks have multiple appurtenances that may be repaired or replaced without ground disturbance. Tank re-coating, cleaning, and electrical and instrumentation repairs also are examples of work that would be completed under this facility maintenance activity.

Schedule

Activities for non-ground-disturbing repair could take less than a day for small repairs, to multiple days for pump replacements or water tank re-coatings and cleanings.

Staff and Equipment

The number of crew members and equipment required for these repairs would depend on the nature of the work to be performed. Trained Valley Water crews could handle most regular maintenance repairs, and typically, one to three crew members would be required for these tasks. However, specialized subcontractors may be necessary for certain types of work.

For these maintenance activities, one to two work trucks and hand-held tools usually would be sufficient. However, equipment may be in confined spaces requiring ventilation and confined-space entry precautions. Valley Water's Environmental Health and Safety Unit would verify that all applicable OSHA regulations are followed. Specialized confined-space equipment would be used by the workers, and inspection crew members and Valley Water vehicles would be present on site. If required, a small crane or hoist may be used for pump replacement.

2.7 Updated PMP Manual Implementation

The updated PMP Manual documents internal process and procedures that Valley Water would use to identify, plan for, and conduct maintenance work. Maintenance work generally would be identified through inspections, during asset management evaluations, and after emergencies. Projects covered under the updated PMP often would be small maintenance projects. However, larger projects may be included under the updated PMP, provided no major changes would occur to expand the capacity of the system.

After a project covered under the updated PMP has been identified, Valley Water would track the project via a work order system. Minor actions typically would be completed by Valley Water maintenance crews and tracked within Maximo,[2] while third-party contractors typically would complete major actions. For all projects covered under the updated PMP, Valley Water staff would be responsible for determining the appropriate level of environmental review and identifying applicable BMPs, AMMs, and mitigation measures in the work order system. Valley Water staff also would be responsible for documenting that any required BMPs, AMMs, and/or mitigation measures were implemented.

Additional information on the level of environmental review, BMPs, and AMMs are presented in the following subsections.

2.7.1 Use of PEIR

In compliance with CEQA Guidelines section 15168(c), prior to implementing any activity or task covered by the updated PMP, Valley Water would confirm the activity is within the scope of the PMP and does not result in any new significant impacts or substantially increase the severity of significant impacts analyzed in this PEIR. This would be confirmed by reviewing the scope of the proposed activity or task and conducting an activity/task-specific environmental review to demonstrate that the environmental effects of the activity or task are within the scope of the updated PMP. A sample of what this environmental review documentation would include is provided in Appendix D. Valley Water would determine which, if any, State and/or federal permits, site-specific measures, and conditions would apply to the activity or task.

If the environmental effects of an activity or task are within this scope of this PEIR, the activity or task may proceed without further environmental review or, in the case of standalone pipeline repairs under 1 mile in length that would be in the public ROW, under a statutory exemption. In the event proposed work is not covered by this PEIR, it would be required to undergo separate CEQA review.

[2] IBM® Maximo® Asset Management is an asset management life-cycle and workflow process management system.

Federally owned pipelines that are operated and maintained by Valley Water are subject to the National Environmental Policy Act (NEPA). Therefore, if any activities or tasks covered by the updated PMP are proposed on federally owned pipelines, review under NEPA may be required and would be coordinated with the appropriate federal agency.

2.7.2 Anticipated Permitting

Valley Water obtains individual Lake and Streambed Alteration Agreements (LSAAs) from CDFW on a per project basis, primarily for water releases and CEQA compliance is a requirement for Fish and Game Code compliance. Valley Water intends to pursue a Routine Maintenance Agreement (RMA) with CDFW for PMP compliance with Fish & Game Code sections 1600 et seq. Implementation of an RMA would provide efficiencies and cost savings to both agencies. CEQA compliance is also required for Program activities on Bureau of Reclamation fee-title and easement lands. The Bureau of Reclamation also completes NEPA for those activities.

2.7.3 Best Management Practices

In 2014, Valley Water developed its Best Management Practices Handbook (included as Appendix C), which contains a comprehensive list of standardized BMPs intended to be incorporated into Valley Water's CEQA documents to avoid or minimize project impacts (Valley Water 2014). BMPs from the Best Management Practices Handbook specifically applicable to the updated PMP are incorporated into the updated PMP Manual by reference and are considered part of the proposed program. The BMPs relevant to the updated PMP are provided Table 2-3.

Table 2-3 Best Management Practices Applicable to the PMP

Number and Title	Requirements
BMP AQ-2	Avoid Stockpiling Odorous Materials
BMP BI-3	Remove Temporary Fills
BMP BI-4	Minimize Adverse Effects of Pesticides on Non-Target Species
BMP BI-5	Avoid Impacts to Nesting Migratory Birds
BMP BI-6	Avoid Impacts to Nesting Migratory Birds from Pending Construction
BMP BI-7	Minimize Impacts to Vegetation from Survey Work
BMP BI-8	Choose Local Ecotypes of Native Plants and Appropriate Erosion-Control Seed Mixes
BMP BI-9	Restore Riffle/Pool Configuration of Channel Bottom
BMP BI-10	Avoid Animal Entry and Entrapment
BMP BI-11	Minimize Predator Attraction
BMP HM-5	Comply with Restrictions on Herbicide Use in Upland Areas
BMP HM-6	Comply with Restrictions on Herbicide Use in Aquatic Areas

Number and Title	Requirements
BMP HM-7	Restrict Vehicle and Equipment Cleaning to Appropriate Locations
BMP HM-8	Ensure Proper Vehicle and Equipment Fueling and Maintenance
BMP HM-9	Ensure Proper Hazardous Materials Management
BMP HM-10	Utilize Spill Prevention Measures
BMP HM-11	Ensure Worker Safety in Areas with High Mercury Levels
BMP HM-12	Incorporate Fire Prevention Measures
BMP WQ-1	Conduct Work from Top of Bank
BMP WQ-2	Evaluate Use of Wheel and Track-Mounted Vehicles in Stream Bottoms
BMP WQ-3	Limit Impact of Pump and Generator Operation and Maintenance
BMP WQ-4	Limit Impacts from Staging and Stockpiling Materials
BMP WQ-5	Stabilize Construction Entrances and Exits
BMP WQ-6	Limit Impact of Concrete Near Waterways
BMP WQ-8	Minimize Hardscape in Bank Protection Design
BMP WQ-9	Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
BMP WQ-10	Prevent Scour Downstream of Sediment Removal
BMP WQ-11	Maintain Clean Conditions at Work Sites
BMP WQ-15	Prevent Water Pollution
BMP WQ-16	Prevent Stormwater Pollution
BMP WQ-17	Manage Sanitary and Septic Waste

2.7.4 Program-Specific Avoidance and Minimization Measures

Because the BMPs from Valley Water's Best Management Practices Handbook are standardized and intended to apply to a broad range of projects and activities, Valley Water has tailored several of the standardized BMPs to apply more directly to PMP-related activities or tasks. To differentiate them from BMPs, these modified measures are identified as program-specific AMMs; however, similar to BMPs, AMMs would be implemented as part of the program (and are not considered mitigation). The updated PMP Manual (Appendix A) includes these AMMs, which are also provided in Table 2-4.

Table 2-4 Program-Specific Avoidance and Minimization Measures

AMM No.	AMM Requirements
AMM HYD-1	**Stormwater Control and Pollution Prevention**. To control stormwater and prevent stormwater pollution, the applicable measures from the following list will be implemented:

AMM No.	AMM Requirements
	1. Where practicable, maintain a vegetated buffer strip between staging/excavation areas and receiving waters in accordance with recommendations laid out in the California Stormwater Quality Association handbook: 50 feet plus four times the percent slope of the land measured between the road and top of bank. [Source: CASQA 2019] 2. Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. This AMM does not apply to the channel bed and areas below the Ordinary High Water Mark in creeks. 3. The preference for erosion control fabrics will be to consist of natural fibers; however, upland 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. 4. Erosion control measures will be installed according to manufacturer's specifications. 5. To prevent stormwater pollution, the appropriate measures from, but not limited to, the following list will be implemented: • silt fences • straw bale barriers • brush or rock filters • storm drain inlet protection • sediment traps or sediment basins • erosion control blankets and/or mats • soil stabilization (i.e., tackified straw with seed, etc.) • straw mulch 6. All temporary construction-related erosion control methods will be removed on completion of construction (e.g., silt fences).
AMM HYD-2	**Obtain Storm Drain Capacity Information.** Valley Water will obtain storm drain capacity information from the responsible municipality before a release to a storm drain. Release rates to the storm drain will be maintained below its conveyance capacity. Valley Water will verify where the storm drain releases to surface water, to determine water quality monitoring locations. Recycled water shall only be released to approved facilities per the class of wastewater being released.
AMM HYD-3	**Erosion Control Plan.** Before any ground-disturbing work, Valley Water will prepare an Erosion Control Plan. At a minimum, the Erosion Control Plan will include: • A proposed schedule of grading activities • Identification of any critical areas of high erodibility potential and/or unstable slopes and sensitive habitat areas • Contour and spot elevations indicating runoff patterns before and after grading • Identification of erosion control measures on slopes, lots, and streets (measures will be based on recommendations contained in the Santa Clara Valley Urban Runoff Pollution Prevention Program [2016], which directs practitioners to the most up-to-date California Stormwater Quality Association construction BMP manual.)

AMM No.	AMM Requirements
	• Soil stabilization techniques, such as short-term biodegradable erosion control blankets and hydroseeding
AMM HYD-4	**Consider Water Release Volume Reduction Options.** Water release volume reduction options (such as performing maintenance activities with partially full pipelines, employing sectioning valves, and/or opportunities for reuse of water) will be considered prior to draining the pipeline.
AMM HYD-5	**Flow Diversion Measure Implementation.** Where practicable, flows will be diverted around actively eroding areas, or areas that may erode when subjected to release flows to avoid the following: damage to Valley Water property or adjacent property; threats to public safety; and in-channel sedimentation and/or water quality concerns or other beneficial uses, such as riparian habitat or recreation. Flow diversion methods may include the use of flexible piping and/or placement of gravel bags to alter flow direction, or equivalent measures. The new flow path and release point will be monitored for signs of erosion.
AMM HYD-6	**Erosion Control and Dewatering Design.** To protect exposed soil and vegetated surfaces from erosion, existing adequate hard infrastructure (e.g., concrete, quick-setting concrete, or riprap spillways and bubblers/dissipators) or temporary dewatering measures (e.g., visqueen spillways) will be used for all water releases. Visqueen spillway design can include a wattle or gravel bag perimeter with a temporary hose that terminates into a geotextile bag to dissipate flows and filter out sediments or debris that may be in a pipeline. Water releases will not occur directly over soil, which may erode into receiving watercourses or directly to receiving watercourse in such a way that erosion can occur at the release point.
AMM HYD-7	**Monitor Receiving Waters.** During releases, receiving water will be monitored by a trained individual for temperature, dissolved oxygen, turbidity, and pH to ensure that applicable Basin Plan (Central Coast Basin or San Francisco Bay Basin) standards are not exceeded and as required by in the Statewide Discharge Permit (No. 4FW062) Monitoring locations, frequency and reporting will be performed in the receiving water in accordance with the Statewide Discharge Permit requirements. Monitoring will take place immediately prior to the release and periodically through the release. If at any time monitoring indicates standards are being exceeded, the release will be halted to determine the reason for exceedance and adjustments would be made to ensure that standards are not exceeded. Data shall be reported to the State Water Quality Control Board as required by the Statewide Discharge Permit (No. 4FW062).
AMM HYD-8	**Monitor Chlorine and Ammonia Levels for Water Releases from Treated Water Pipelines.** For treated pipelines, chlorine and ammonia levels in both the released water and receiving water will be monitored by a trained individual to verify that no residual disinfection chemicals remain in excess of standards established in the applicable Basin Plan (Central Coast Basin or San Francisco Bay Basin) and as required by in the Statewide Discharge Permit (No. 4FW062). Monitoring locations, frequency and reporting will be performed in the receiving water in accordance with the Statewide Discharge Permit requirements. Monitoring will take place immediately prior to the release and periodically through the release. If at any time monitoring indicates standards are being exceeded, the release will be halted to determine the reason for exceedance and adjustments would be made to ensure that standards are not exceeded. Data shall be reported to the State Water Quality Control Board as required by the Statewide Discharge Permit (No. 4FW062)
AMM HYD-9	**Erosion Control and Monitoring.** The release location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, releases will be terminated until appropriate erosion control BMPs are installed. Monitoring will be conducted just before the start of the release and regularly

AMM No.	AMM Requirements
	(e.g., every hour, every 4 hours, daily) during the release. The monitoring frequency will depend on site conditions and the nature of the release.
AMM HYD-10	**Inspection and Restoration of Eroded Areas.** An environmental monitor will walk along each release drainage 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures shall be taken to correct the erosion, if necessary. Correction measures may include installation of soil stabilization measures (e.g., wattles), hydroseeding, and/or recontouring the land to its previous state.
AMM HYD-11	**Prevent Releases to Water Bodies at Flood Stage.** Valley Water shall not release water to any natural water body approaching flood stage, nor will Valley Water release water to a natural waterbody during a prolonged precipitation event in which the additional flows may put the waterbody in to flood stage.
AMM GEO-1	**Avoidance of Access Routes with Slopes Greater than 20 Percent.** In considering access routes, slopes of greater than 20 percent will be avoided if possible. Subsequent to access, any sloped area will be examined for evidence of instability and either will be revegetated or filled as necessary to prevent future landslide or erosion.
AMM BIO-1	**Biologist Review.** Prior to the start of program activities, a qualified biologist will use Valley Water's GIS database, the CNDDB, VHP data, and/or other suitable tools to identify potential special-status species, suitable habitat for special-status species, and sensitive habitats within or near work areas. The biologist will also work with Valley Water crews to determine the nature and extent of the proposed activity. Based on these combined factors, the biologist will determine measures including BMPs, VHP conditions, program-specific AMMs, and CEQA Mitigation Measures to minimize impacts on these resources.
AMM BIO-2	**Employee/Contractor Training.** All appropriate Valley Water staff and contractors will receive annual training on BMPs, VHP Conditions, and CEQA Mitigation Measures that pertain to the protection of biological resources. The training will also include an overview of special-status species identification and habitat requirements
AMM BIO-3	**Adhere to Pesticide Injunction Requirements.** The requirements of applicable federal injunctions (i.e., the 2014 Salmonid Injunction, 2010 Bay Area Listed Species Injunction, and 2006 California Red-Legged Frog Injunction, and any updates thereof) will be adhered to.
AMM BIO-4	**Prevention of Spread or Mobilization of Plant Pathogens and Invasive Plants.** To prevent the spread/introduction of non-native invasive plant species, plant pathogens such as sudden oak death syndrome (*Phytophthora ramorum*), other soil-based *Phytophthora* species, and chytrid fungus, the following procedures will be implemented: • The number of vehicles and equipment will be minimized to the extent feasible. • Vehicular travel will be limited to established access roads and trails to the extent feasible. • Heavy equipment (e.g., excavators, drill rigs, track mounted rigs), vehicles, and large tools must be cleaned (i.e., thoroughly washed) and free of soil and debris prior to entering the study area from outside locations (i.e., arriving from other projects). Vehicles that only travel and park on paved roads do not require external cleaning. • The interior of vehicles and heavy equipment will be free of dirt/debris and other potentially contaminated materials. Interiors should be vacuumed, washed, and/or treated with sanitizing agents to minimize the introduction of invasive plants and pathogens. The exterior of large equipment such as bucket loaders, tracks or wheels, undercarriage, and anything that accumulates soil and debris should be thoroughly cleaned.

AMM No.	AMM Requirements
	• Spray bottles containing either 70 to 90 percent ethyl/isopropyl alcohol or a solution containing a 1:20 bleach-to-water ratio and boot brushes or hoof picks will be present at all entry points for personnel to decontaminate their shoes, small tools, and other equipment prior to entering the study area when arriving from outside locations (i.e., arriving from other projects or areas outside of the PREP region). The spray will be liberally applied (i.e., until thoroughly soaked) to all small equipment and tools (e.g., shovels, screens, boots) and allowed to air dry prior to entry. In addition, to minimize the potential for introduction or spread of *Phytophthora* during revegetation work, container stock used at revegetation sites will be sourced from approved nurseries and will be installed in compliance with the latest guidance at www.Calphytos.org, which include the Guidelines to Minimize *Phytophthora* Pathogens in Restoration Nurseries (Working Group for *Phytophthoras* in Native Habitats, 2016a), Guidance for Plant Pathogen Prevention when Working at Contaminated Restoration Sites or Sites with Rare Plants and Sensitive Habitat (Working Group for *Phytophthoras* in Native Habitats 2016b), and Guidelines to Minimize Phytophthora Contamination in Restoration Projects (Working Group for *Phytophthoras* in Native Habitats 2016c) . Valley Water may adopt newer guidelines as they become available.
AMM BIO-5	**Aquatic Invasive Species Decontamination.** The most current guidance on equipment decontamination and sanitization to prevent the spread of aquatic invasive species into sensitive waterways (including ponds, creeks, rivers, wetlands, and reservoir) will be adhered to.
AMM BIO-6	**Release Rates.** Release rates will be ramped up slowly in the beginning of dewatering and down slowly towards the end of dewatering to reduce the risk of negative impacts to aquatic species and so that the changes in flow rates in the receiving waters can be monitored for adverse conditions, and corrective actions can be taken.
AMM BIO-7	**Additional Protection of Nesting Birds**. If an active nest is identified during the surveys performed in compliance with BMP BI-5, an appropriate no-disturbance buffer (determined by the qualified biologist) to protect the nest shall be delineated and enforced. Buffers shall remain in place until the qualified biologist determines the nest is inactive.
AMM BIO-8	**Work Windows for Salmonid Streams.** Program activities involving ground disturbance typically will be conducted in the bed and banks of salmonid streams between June 15 and October 15.
AMM BIO-9	**Herbicide Application in Sensitive Habitats.** Valley Water will avoid applying herbicides within sensitive serpentine, riparian, and wetland habitats, and within habitat for listed wildlife species where mitigation for impacts would be required, throughout the program area. If vegetation maintenance is needed within these areas, mechanical methods will be used.
AMM HAZ-1	**Aquatic Protection from Hazardous Wastes.** Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that may be hazardous to aquatic life will be prevented from contaminating the soil and/or entering waters of the State. Any of these materials, placed within or where they may enter a stream or lake, will be removed immediately.
AMM HAZ-2	**Secondary Containment and Storage.** All chemicals that are stored in staging areas will be stored in secondary containment capable of containing 110 percent of the primary container. Proper storage and security will be implemented so that chemicals are not spilled or vandalized during non-working hours.

AMM No.	AMM Requirements
AMM HAZ-3	**Equipment and Fluid Storage.** Valley Water will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels. All equipment will be stored in a secure area, away from any channel. Between October 15 and April 15 (and depending on rain patterns, possibly before and after these dates as well), all equipment fluid storage areas will be provided with an impermeable cover, to prevent contact with stormwater.
AMM HAZ-4	**Hazardous Materials Transport Requirements.** Drivers transporting sodium bisulfite, sodium hypochlorite, or any other hazardous material will have a commercial driver's license with a HAZMAT endorsement.
AMM HAZ-5	**Worker Wash Stations.** Valley Water will provide one portable toilet and one wash station per 20 workers or a fraction thereof for any program work sites that do not have mobile access to a nearby facility. Wash stations will also be required on site for any job where hazardous materials are handled (e.g., where repair work is conducted), or where pipeline draining will involve using a dechlorination chemical.
AMM HAZ-6	**Avoid Exposing Soils with High Mercury Levels**. Bank stabilization projects in portions of the Guadalupe River watershed affected by historic mercury mining may expose soils containing mercury. 1. In Basin Plan identified creeks in the Guadalupe River Basin, soils that are likely to be disturbed or excavated shall be tested for mercury (Hg). Soils shall be remediated if disturbed or excavated soils exposed to streamflow have a residual sample test exceeding 0.2 mg mercury per kg erodible sediment (dry wt., median). 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. 2. Soils with residual sample mercury concentrations exceeding 0.2 mg mercury per kg erodible sediment (dry wt., median) shall be removed and disposed of in a Class I landfill following established work practices and hazard control measures. Soils with residual sample mercury concentrations less than 0.2 mg mercury per kg erodible sediment (dry wt., median) will remain at the project site.
AMM HAZ-7	**Existing Hazardous Sites.** For program activities involving ground disturbance (e.g., excavation, grading), Valley Water will conduct a search of the Hazardous Waste and Substances Site List/Cortese List for existing known contaminated sites listed on the State Water Resource Control Board's GeoTracker database and the Department of Toxic Substances Control (DTSC) EnviroStor database in the vicinity of the proposed work site. If any ground-disturbing activities are proposed within 1,500 feet of any "open" sites where contamination has not been remediated, Valley Water will contact the case manager listed in the database. Valley Water will work with the case manager to ensure program activities would not affect cleanup or monitoring activities or threaten the public or environment.
AMM TRA-1	**Traffic Control Plan.** For program activities requiring encroachment into a city, county, or State-owned road, Valley Water or its contractor shall prepare a Traffic Control Plan (TCP). The TCP shall be prepared by a California-licensed Traffic Engineer or licensed civil professional engineer and conform to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and the Manual on Uniform Traffic Control Devices. At a minimum, the TCP shall include the following elements:

AMM No.	AMM Requirements
	• Circulation and detour plans to minimize impacts on local street circulation (haul routes will minimize truck traffic on local roadways to the extent possible). • A description of emergency response vehicle access (an alternate route shall be identified if the road or area is completely blocked, preventing access by an emergency responder). • Procedures to schedule construction activities in a manner that will minimize overlapping construction phases that require truck hauling to the extent feasible. • Identification of staging areas that will be designated for storage of all equipment and materials in a manner that minimizes obstruction to traffic. • Identification of designated construction worker parking locations. • Procedures for use of temporary signs, flashing lights, barricades, flaggers, and other traffic safety personnel or devices where required to control or direct the flow of traffic. • Temporary traffic marking installation requirements where required to direct the flow of traffic (traffic markings will be maintained for the duration of road/lane closure and removed when completed). • Procedures to keep sidewalks and bicycle lanes open for pedestrians and cyclists, respectively, to the extent safe, or identification of detour routes and signing if sidewalks or bicycle lanes will be closed. • Procedures to maintain driveway access to residences or businesses unless other arrangements are made. A minimum of 12-foot-wide travel lanes will be maintained unless otherwise approved by Valley Water and/or an agency with encroachment jurisdiction. Valley Water or its contractors will submit the TCP to the agency with encroachment jurisdiction in advance of program activities, to provide the agency with the opportunity to review the TCP and provide additional or alternative recommendations as appropriate. The contractor must submit documentation to Valley Water that the plan has been approved by the appropriate jurisdictional agency prior to the commencement of construction.
AMM TRA-2	**Equipment Routing near Roads and Pedestrian Pathways.** Pipes, hoses, and other equipment will be routed around roadways and pedestrian pathways (e.g., sidewalks, trails) to the extent feasible. When rerouting is not possible, pipes and hoses will be covered, and warning signage will be posted several feet beyond the location where the road or pathway is crossed by pipes or hoses, to notify the public regarding the hazard.
AMM AIR-1	**Implement BAAQMD Dust Control Measures.** Program activities will be conducted in accordance with current BAAQMD guidance regarding construction-related fugitive dust emissions. The following measures comprise construction BMPs from the 2022 BAAQMD CEQA Air Quality Guidelines: 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 will be prohibited.

AMM No.	AMM Requirements
	4. All vehicle speeds on unpaved roads will be limited to 15 miles per hour. 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. All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph. 7. All trucks and equipment, including their tires, will be washed off prior to leaving the site. 8. Unpaved roads providing access to sites located 100 feet or further from a paved road will be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. 9. Publicly visible signs will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number will also be visible to ensure compliance with applicable regulations.
AMM GHG-1	**GHG Efficient Equipment.** Use zero-emission and hybrid-powered equipment to the greatest extent possible, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area or AB 617 community. (BAAQMD 2022)
AMM GHG-2	**Limiting Portable Generators.** Where grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills, and compressors, and use electric tools whenever feasible. (BAAQMD 2022)
AMM GHG-3	**Carpool Encouragement.** Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers and offer meal options onsite or shuttles to nearby meal destinations for construction employees. (BAAQMD 2022)
AMM REC-1	**Notify Agencies with Jurisdiction and Coordinate Regarding Potential Disturbance to Trails and Areas Adjacent to Parks.** As part of its Annual Work Plan, Valley Water staff shall notify the authority responsible for trails or areas adjacent to parks that could be subject to closure. The type of work, location, and duration of each program activity that will affect trails or other facilities shall be identified, and scheduling and staging shall be coordinated to minimize the area and period of disturbance.
AMM REC-2	**Prepare and Implement a Construction Operations Plan.** Valley Water shall prepare a Construction Operations Plan to outline access, staging, stockpiling of spoils and other related activities. Vehicle access shall be restricted to paved surfaces where possible, and staging areas shall be maintained at least 25 feet from trails and other active recreational facilities where possible. Where practicable, Valley Water shall avoid completely blocking trail access or recreational use and provide alternative routes, signage, and safety fencing, in coordination with the authority responsible for the recreational facility. Where work is proposed adjacent to a recreational trail, warning signs shall be posted several feet beyond the limits of work.
AMM REC-3	**Repair Any PMP-Related Damage to Trails or Adjacent Park Facilities.** On completion of work, Valley Water shall repair any damage to trails or adjacent park facilities caused by the maintenance work. The repair shall return the facility to a level comparable to that existing before the work began. All work materials shall be removed from the site no later than 24 hours after the work is completed.

AMM No.	AMM Requirements
AMM REC-4	**Direct Releases to Avoid Crossing Trails and Slopes within Recreational Areas.** All releases shall be directed to avoid crossing trails and avoid slopes within recreational areas wherever possible. If avoidance is not possible, energy dissipation and erosion control measures shall be implemented consistent with Hydrology BMPs to avoid significant effects. Restoration of the trail or slope shall be completed upon completion of construction. Restoration shall be to the satisfaction of the authority responsible for the trail or park.
AMM NOI-1	**Construction Noise Reduction Measures.** Valley Water will require its staff and/or contractor to implement the following noise reduction measures: • Stationary noise-generating equipment will be located as far from sensitive receptors as possible. Such equipment also will be oriented to minimize noise directed toward sensitive receptors. Where space allows, other non-noise generating equipment (e.g., water tanks, roll-off dumpsters) will be positioned between the noise source and sensitive receptors. • Equipment and staging areas will be located as far from sensitive receptors as possible. At the staging location, equipment and materials also will be kept as far from adjacent sensitive receptors as possible. • Construction vehicles and equipment will be maintained to manufacturer's specifications; operated by an experienced, trained operator who will use the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds). • 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. • Electrically powered equipment will be used instead of pneumatic or internal combustion-powered equipment, where feasible. • The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only. • The arrival and departure of trucks hauling material will be limited to the hours of construction. The use of jake brakes will be prohibited in residential areas.
AMM AES-1	**Avoid Staging Near Scenic Resources.** Valley Water will avoid establishing staging areas within 1,000 feet of any scenic resources, such as designated vista points along urban or rural trails, visible rock outcroppings, or designated historic buildings.
AMM UT-1	**Utility Coordination.** Valley Water will be responsible for coordination of activities involving utilities within a shared ROW and protection of any utility during construction. Valley Water will notify any utility within a shared ROW before the start of construction activity. Where an existing utility is known to exist or anticipated to be encountered during construction, Valley Water will be responsible for notifying and/or supplying appropriate drawings to the affected utility's owner in advance of program work in which the utility will be involved. To the extent practicable, Valley Water will avoid interruptions to any utility service (gas, water, electricity, telephone, etc.). If a utility service cannot be avoided, Valley Water will coordinate with the utility provider for facility relocation or a temporary bypass solution.

2.7.5 Applicable VHP Conditions

The VHP includes pipeline maintenance activities proposed as part of the updated PMP as VHP-covered activities. As a VHP permittee, Valley Water is required to implement VHP conditions as part of the program, and VHP conditions therefore are not considered CEQA

mitigation measures. The VHP conditions relevant to the updated PMP are provided Table 2-5. Additional details regarding VHP conditions are provided in Section 3.3, Biological Resources.

Table 2-5 VHP Conditions Applicable to the PMP

Condition No.	VHP Condition
Condition 1	Avoid Direct Impacts on Legally Protected Plant and Wildlife Species
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality
Condition 4	Avoidance and Minimization for In-Stream Projects
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance
Condition 7	Rural Development Design and Construction Requirements
Condition 8	Implement Avoidance and Minimization Measures for Rural Road Maintenance
Condition 11	Stream and Riparian Setbacks
Condition 12	Wetland and Pond Avoidance and Minimization
Condition 13	Serpentine and Associated Covered Species Avoidance and Minimization
Condition 14	Valley Oak and Blue Oak Woodland Avoidance and Minimization
Condition 15	Western Burrowing Owl
Condition 16	Least Bell's Vireo
Condition 17	Tricolored Blackbird
Condition 18	San Joaquin Kit Fox
Condition 19	Plant Salvage when Impacts are Unavoidable
Condition 20	Avoid and Minimize Impacts to Covered Plant Occurrences

VHP Conditions 3, 4, and 5 require compliance with a suite of VHP-prescribed avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided below in Table 2-6.

Table 2-6. Santa Clara Valley Habitat Plan Aquatic Avoidance and Minimization Measures

Measure #	Category	VHP Avoidance and Minimization Measure
1	General	Minimize the potential impacts on covered species most likely to be affected by changes in hydrology and water quality.
2	General	Reduce stream pollution by removing pollutants from surface runoff before the polluted surface runoff reaches local streams.
3	General	Maintain the current hydrograph and, to the extent possible, restore the hydrograph to more closely resemble predevelopment conditions.
4	General	Reduce the potential for scour at stormwater outlets to streams by controlling the rate of flow into the streams.

Measure #	Category	VHP Avoidance and Minimization Measure
5	General	Invasive plant species removed during maintenance will be handled and disposed of in such a manner as to prevent further spread of the invasive species.
6	General	Activities in the active (i.e., flowing) channel will be avoided. If activities must be conducted in the active channel, avoidance and minimization measures identified in this table will be applied.
7	General	Personnel shall prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
8	General	Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations).
9	General	Personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means when removing sediments from the streams.
10	General	If ground disturbing activities are planned for a stream channel that is known or suspected to contain elevated levels of mercury, the following steps should be taken. • Avoid disturbing soils in streams known or suspected to contain high levels of mercury. • Soils that are likely to be disturbed or excavated shall be tested for mercury. Soils shall be remediated if: – disturbed or excavated soils exposed to flood flows below the 2.33-year channel flow level exceed 1 ppm Hg, or – disturbed or excavated soils above the 2.33-year flow level exceed 20 ppm Hg.
11	General	Vehicles shall be washed only at approved areas. No washing of vehicles shall occur at job sites.
12	General	No equipment servicing shall be done in the stream channel or immediate flood plain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps, generators).
13	General	Personnel shall use the appropriate equipment for the job that minimizes disturbance to the stream bottom. Appropriately-tired vehicles, either tracked or wheeled, shall be used depending on the situation
14	General	If high levels of groundwater in a work area are encountered, the water is pumped out of the work site. If necessary to protect water quality, the water shall be directed into specifically constructed infiltration basins, into holding ponds, or onto areas with vegetation to remove sediment prior to the water re-entering a creek.
15	General	If native fish or non-covered, native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a native fish and aquatic vertebrate relocation plan shall be implemented when ecologically appropriate as determined by a qualified biologist to ensure that significant numbers of native fish and aquatic vertebrates are not stranded.

Measure #	Category	VHP Avoidance and Minimization Measure
		Prior to the start of work or during the installation of water diversion structures, native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual project sites when site conditions preclude reasonably effective operation of capture gear and equipment, or when the safety of biologist conducting the capture may be compromised. Relocation of native fish or aquatic vertebrates may not always be ecologically appropriate. Prior to capturing native fish and/or vertebrates, the qualified biologist will use a number of factors, including site conditions, system carrying capacity for potential relocated fish, and flow regimes (e.g., if flows are managed) to determine whether a relocation effort is ecologically appropriate. If so, the following factors will be considered when selecting release site(s): • similar water temperature as capture location; • ample habitat availability prior to release of captured individuals; • presence of other same species so that relocation of new individuals will not upset the existing prey/predation function; • carrying capacity of the relocation location; • potential for relocated individual to transport disease; and • low likelihood of fish reentering work site or becoming impinged on exclusion net or screen. Proposals to translocate any covered species will be reviewed and approved by the Wildlife Agencies.
16	General	When work in a flowing stream is unavoidable, the entire streamflow shall be diverted around the work area by a barrier, except where it has been determined by a qualified biologist that the least environmentally disruptive approach is to work in a flowing stream. Where feasible, water diversion techniques shall allow stream flows to gravity flow around or through the work site.
17	General	Coffer dams shall be installed both upstream and downstream not more than 100 feet from the extent of the work areas. Coffer dam construction shall be adequate to prevent seepage into or from the work area. Stream flow will be pumped around the work site using pumps and screened intake hoses. All water shall be discharged in a non- erosive manner (e.g., gravel or vegetated bars, on hay bales, on plastic, on concrete, or in storm drains when equipped with filtering devices, etc.).
18	General	Small in-channel berms that deflect water to one side of the channel during project implementation may be constructed of channel material in channels with low flows.
19	General	Sumps or basins may also be used to collect water, where appropriate (e.g., in channels with low flows).

Measure #	Category	VHP Avoidance and Minimization Measure
20	General	Diversions shall maintain ambient stream flows below the diversion, and waters discharged below the project site shall not be diminished or degraded by the diversion. All materials placed in the channel to dewater the channel shall be removed when the work is completed. Normal flows shall be restored to the affected stream as soon as is feasible and safe after completion of work at that location.
21	General	To the extent that stream bed design changes are not part of the project, the stream bed will be returned to as close to pre-project condition as appropriate.
22	General	To the extent feasible, all temporary diversion structures and the supportive material shall be removed no more than 48 hours after work is completed.
23	General	Temporary fills, such as for access ramps, diversion structures, or cofferdams, shall be completely removed upon finishing the work.
24	General	To prevent increases in temperature and decreases in dissolved oxygen (DO), if bypass pipes are used, they shall be properly sized (i.e., larger diameter pipes to better pass the flows). Use of bypass pipes may be avoided by creating a low-flow channel or using other methods to isolate the work area.
25	General	Diversions shall maintain fish passage when the project meets the following conditions: 10. the length of the area dewatered exceeds 500 feet, and/or 11. the length of time the stream is dewatered exceeds two weeks in length. Conditions for fish passage shall be met as long as the diversion: c. maintains contiguous flows through a low flow channel in the channel bed or an artificial open channel, d. presents no vertical drops exceeding six (6) inches and follows the natural grade of the site, e. maintains water velocities that shall not exceed eight feet per second (8 ft/sec), and; f. maintains adequate water depths consistent with normal conditions in the project reach. An artificial channel used for fish passage shall be lined with cobble/gravel. A closed conduit pipe shall not be used for fish passage. The inlets of diversions shall be checked daily to prevent accumulation of debris.
26	General	Any sediment removed from a project site shall be stored and transported in a manner that minimizes water quality impacts.
27	General	Sediment from the San Francisco Bay Watershed, including that for reuse, will not be removed to areas any farther south than Metcalf Road in south San Jose.
28	General	Where practical, the removed sediments and gravels will be re-used.
29	General	Existing native vegetation shall be retained by removing only as much vegetation as necessary to accommodate the trail clearing width. Maintenance roads should be used to avoid effects on riparian corridors.

Measure #	Category	VHP Avoidance and Minimization Measure
30	General	Vegetation control and removal in channels, on stream banks, and along levees and maintenance roads shall be limited to removal necessary for facility inspection purposes, or to meet regulatory requirements or guidelines.
31	General	When conducting vegetation management, retain as much understory brush and as many trees as feasible, emphasizing shade producing and bank stabilizing vegetation. If riparian vegetation is to be removed with chainsaws, consider using saws currently available that operate with vegetable-based bar oil.
32	General	In-channel vegetation removal may result in increased local erosion due to increased flow velocity. To minimize the effect, the top of the bank shall be protected by leaving vegetation in place to the maximum extent possible.
33	General	Regional Board objectives for temperature change in receiving waters (measured 100 feet downstream of discharge point) shall not be exceeded. Receiving water and discharge water may be monitored for temperature changes after a comparison of ambient temperature to pipeline water temperature suggests the potential for change.
34	Project Design	Use the minimum amount of impermeable surface (building footprint, paved driveway, etc.) as practicable.
35	Project Design	Use pervious materials, such as gravel or turf pavers, in place of asphalt or concrete to the extent practicable.
36	Project Design	Use flow control structures such as swales, retention/detention areas, and/or cisterns to maintain the existing (pre- project) peak runoff.
37	Project Design	Direct downspouts to swales or gardens instead of storm drain inlets.
38	Project Design	Use flow dissipaters at runoff inlets (e.g., culvert drop-inlets) to reduce the possibility of channel scour at the point of flow entry.
39	Project Design	Minimize alterations to existing contours and slopes, including grading the minimum area necessary.
40	Project Design	Maintain native shrubs, trees and groundcover whenever possible and revegetate disturbed areas with local native or non-invasive plants.
41	Project Design	Combine flow-control with flood control and/or treatment facilities in the form of detention/retention basins, ponds, and/or constructed wetlands.
42	Project Design	Use flow control structures, permeable pavement, cisterns, and other runoff management methods to ensure no change in post-construction peak runoff volume from pre-project conditions for all covered activities with more than 5,000 square feet of impervious surface.
43	Project Design	Site characteristics will be evaluated in advance of project design to determine if non-traditional designs, such as bioengineered bank treatments that incorporate live vegetation, can be successfully utilized while meeting the requirements of the project.

Measure #	Category	VHP Avoidance and Minimization Measure
44	Project Design	Maintenance of natural stream characteristics, such as riffle-pool sequences, riparian canopy, sinuosity, floodplain, and a natural channel bed, will be incorporated into the project design.
45	Project Design	Stream crossings shall incorporate a free-span bridge unless infeasible due to engineering or cost constraints or unsuitable based on minimal size of stream (swale without bed and banks or a very small channel). If a bridge design cannot free-span a stream, bridge piers and footings will be designed to have minimum impact on the stream. A hydraulics analysis must be prepared and reviewed by the jurisdictional partner, including SCVWD as appropriate, demonstrating that piers or footings will not cause significant scour or channel erosion. Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek. Native plantings, natural debris, or scattered rocks will be installed under bridges to provide wildlife cover and encourage the use of crossings.
46	Project Design	Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek.
47	Project Design	If a culvert is used, up- and downstream ends of the culvert must be appropriately designed so that the stream cannot flow beneath the culvert or create a plunge pool at the downstream end. Preference will be given to designs that allow a natural bottom (arch culvert) and/or which do not alter natural grade.
48	Project Design	Trails will be sited and designed with the smallest footprint necessary to cross through the in-stream area. Trails will be aligned perpendicular to the channel and be designed to avoid any potential for future erosion. New trails that follow stream courses will be sited outside the riparian corridor.
49	Project Design	The project or activity must be designed to avoid the removal of riparian vegetation, if feasible. If the removal of riparian vegetation is necessary, the amount shall be minimized to the amount necessary to accomplish the required activity and comply with public health and safety directives.
50	Project Design	If levee reconstruction requires the removal of vegetation that provides habitat value to the adjacent stream (e.g., shading, bank stabilization, food sources, etc.), then the project will include replacement of the vegetation/habitat that was removed during reconstruction unless it is determined to be inappropriate to do so by the relevant resource agencies (e.g., CDFG and USFWS).
51	Project Design	All projects will be conducted in conformance with applicable County and/or city drainage policies.
52	Project Design	Adhere to the siting criteria described for the borrow site covered activity (see Chapter 2 for details).
53	Project Design	When possible, maintain a vegetated buffer strip between staging/excavation areas and receiving waters.

Measure #	Category	VHP Avoidance and Minimization Measure
54	Project Design	When not within the construction footprint, deep pools within stream reaches shall be maintained as refuge for fish and wildlife by constructing temporary fencing and/or barrier so as to avoid pool destruction and prevent access from the project site.
55	Project Design	For stream maintenance projects that result in alteration of the stream bed during project implementation, its low flow channel shall be returned to its approximate prior location with appropriate depth for fish passage without creating a potential future bank erosion problem.
56	Project Design	Increased water velocity at bank protection sites may increase erosion downstream. Therefore, bank stabilization site design shall consider hydraulic effects immediately upstream and downstream of the work area. Bank stabilization projects will be designed and implemented to provide similar roughness and characteristics that may affect flows as the surrounding areas just upstream and downstream of the project site.
57	Project Design	When parallel to a stream or riparian zone and not located on top of a levee, new trails shall be located behind the top of bank or at the outside edge of the riparian zone except where topographic, resource management, or other constraints or management objectives make this not feasible or undesirable.
58	Project Design	Existing access routes and levee roads shall be used if available to minimize impacts of new construction in special status species habitats and riparian zones.
59	Project Design	Trails in areas of moderate or difficult terrain and adjacent to a riparian zone shall be composed of natural materials or shall be designed (e.g., a bridge or boardwalk) to minimize disturbance and need for drainage structures, and to protect water quality.
60	Project Design	Trail crossings of freshwater stream zones and drainages shall be designed to minimize disturbance, through the use of bridges or culverts, whichever is least environmentally damaging. Structures over water courses shall be carefully placed to minimize disturbance. Erosion control measures shall be taken to prevent erosion at the outfalls of drainage structures.
61	Construction	Minimize ground disturbance to the smallest area feasible.
62	Construction	Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
63	Construction	Prepare and implement sediment erosion control plans.
64	Construction	No winter grading unless approved by City Engineer and specific erosion control measures are incorporated.
65	Construction	Control exposed soil by stabilizing slopes (e.g., with erosion control blankets) and protecting channels (e.g., using silt fences or straw wattles).
66	Construction	Control sediment runoff using sandbag barriers or straw wattles.

Measure #	Category	VHP Avoidance and Minimization Measure
67	Construction	No stockpiling or placement of erodible materials in waterways or along areas of natural stormwater flow where materials could be washed into waterways.
68	Construction	Stabilize stockpiled soil with geotextile or plastic covers.
69	Construction	Maintain construction activities within a defined project area to reduce the amount of disturbed area.
70	Construction	Only clear/prepare land which will be actively under construction in the near term.
71	Construction	Preserve existing vegetation to the extent possible.
72	Construction	Equipment storage, fueling and staging areas will be sited on disturbed areas or non-sensitive habitat outside of a stream channel.
73	Construction	Avoid wet season construction.
74	Construction	Stabilize site ingress/egress locations.
75	Construction	Dispose of all construction waste in designated areas and prevent stormwater from flowing onto or off of these areas.
76	Construction	Prevent spills and clean up spilled materials.
77	Construction	Sweep nearby streets at least once a day.
78	Construction	In-stream projects occurring while the stream is flowing must use appropriate measures to protect water quality, native fish and covered wildlife species at the project site and downstream of the project site.
79	Construction	If mercury contamination may be present, the channel must be dewatered prior to commencement of the activity.
80	Construction	All personnel working within or adjacent to the stream setback (i.e., those people operating ground-disturbing equipment) will be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations of project proponents working under this Plan.
81	Construction	Temporary disturbance or removal of aquatic and riparian vegetation will not exceed the minimum necessary to complete the work.
82	Construction	Channel bed temporarily disturbed during construction activities will be returned to pre-project or ecologically improved conditions at the end of construction.
83	Construction	Sediments will be stored and transported in a manner that minimizes water quality impacts. If soil is stockpiled, no runoff will be allowed to flow back to the channel.

Measure #	Category	VHP Avoidance and Minimization Measure
84	Construction	Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) will be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian vegetation. Fiber rolls used for erosion control will be certified as free of noxious weed seed. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control measures will be placed between the outer edge of the buffer and the project site.
85	Construction	Seed mixtures applied for erosion control will not contain invasive nonnative species and will be composed of native species or sterile nonnative species. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives.
86	Construction	Topsoil removed during soil excavation will be preserved and used as topsoil during revegetation when it is necessary to conserve the natural seed bank and aid in revegetation of the site.
87	Construction	Vehicles operated within and adjacent to streams will be checked and maintained daily to prevent leaks of materials that, if introduced to the water, could be deleterious to aquatic life.
88	Construction	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas.
89	Construction	The potential for traffic impacts on terrestrial animal species will be minimized by adopting traffic speed limits.
90	Construction	All trash will be removed from the site daily to avoid attracting potential predators to the site. Personnel will clean the work site before leaving each day by removing all litter and construction-related materials.
91	Construction	To prevent the spread of exotic species and reduce the loss of native species, aquatic species will be netted at the drain outlet when draining reservoirs or ponds to surface waters. Captured native fish, native amphibians, and western pond turtles will be relocated if ecologically appropriate. Exotic species will be dispatched.
92	Construction	To minimize the spread of pathogens all staff working in aquatic systems (i.e., streams, ponds, and wetlands)— including site monitors, construction crews, and surveyors—will adhere to the most current guidance for equipment decontamination provided by the Wildlife Agencies at the time of activity implementation. Guidance may require that all materials that come in contact with water or potentially contaminated sediments, including boot and tire treads, be cleaned of all organic matter and scrubbed with an appropriate cleansing solution, and that disposable gloves be worn and changed between handling equipment or animals. Care should be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

Measure #	Category	VHP Avoidance and Minimization Measure
93	Construction	When accessing upland areas adjacent to riparian areas or streams, access routes on slopes of greater than 20 percent should generally be avoided. Subsequent to access, any sloped area should be examined for evidence of instability and either revegetated or filled as necessary to prevent future landslide or erosion.
94	Construction	Personnel shall use existing access ramps and roads if available. If temporary access points are necessary, they shall be constructed in a manner that minimizes impacts to streams.
95	Construction	To prevent inadvertent entrapment of animals during excavation, all excavated, steep-walled holes or trenches more than 2-feet deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks.
96	Construction	Isolate the construction area from flowing water until project materials are installed and erosion protection is in place.
97	Construction	Erosion control measures shall be in place at all times during construction. Do not start construction until all temporary control devices (straw bales, silt fences, etc.) are in place downstream of project site.
98	Construction	When needed, utilize in-stream grade control structures to control channel scour, sediment routing, and headwall cutting.
99	Post-Construction	Conduct street cleaning on a regular basis
100	Post-Construction	Potential contaminating materials must be stored in covered storage areas or secondary containment that is impervious to leaks and spills
101	Post-Construction	Runoff pathways shall be free of trash containers or trash storage areas. Trash storage areas shall be screened or walled
102	Post-Construction	Immediately after project completion and before close of seasonal work window, stabilize all exposed soil with mulch, seeding, and/or placement of erosion control blankets.
103	Post-Construction	All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding. Cut-and-fill slopes will be planted with local native or non-invasive plants suitable for the altered soil conditions.

Measure #	Category	VHP Avoidance and Minimization Measure
104	Post-Construction	Measures will be utilized on site to prevent erosion along streams (e.g., from road cuts or other grading), including in streams that cross or are adjacent to the project proponent's property. Erosion control measures will utilize natural methods such as erosion control mats or fabric, contour wattling, brush mattresses, or brush layers. For more approaches and detail, please see the Bank Protection/ Erosion Repair Design Guide in the Santa Clara Valley Water Resources Protection Collaborative's User Manual: Guidelines & Standards for Land Use Near Streams (Santa Clara Valley Water Resources Protection Collaborative 2006).
105	Post-Construction	Vegetation and debris must be managed in and near culverts and under and near bridges to ensure that entryways remain open and visible to wildlife and that passage through the culvert or bridge remains clear.
106	Post-Construction	Prior to undertaking stream maintenance activities, reach conditions will be assessed to identify tasks that are necessary to maintain the channel for the purpose for which it was designed and/or intended (e.g., flood control, groundwater recharge). Only in-stream work that is necessary to maintain the channel will be conducted.
107	Post-Construction	On streams managed for flood control purposes, when stream reaches require extensive vegetation thinning or removal (e.g., when the channel has been fully occluded by willows or other vegetation), removal will be phased so that some riparian land cover remains and provides some habitat value. In addition, vegetation removal will be targeted and focused on removing the least amount of riparian vegetation as possible while still meeting the desired flood control needs. For example, vegetation removal should be focused on shrubby undergrowth at the toe-of-slope that is most likely to increase roughness and create a flooding hazard. Vegetation on the upper banks, particularly mature tree canopy, should be maintained to the extent possible to provide habitat for birds and small mammals and shading for the active channel.
108	Post-Construction	When reaches require sediment removal, approaches will be considered that may reduce the impacts of the activity. Examples of potential approaches include phasing of removal activities or only removing sediment along one half of the channel bed, allowing the other half to remain relatively undisturbed.
109	Post-Construction	In streams not managed for flood control purposes, woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) will be retained unless it is threatening a structure, impedes reasonable access, or is causing bank failure and sediment loading to the stream.
110	Post-Construction	If debris blockages threaten bank stability and may increase sedimentation of downstream reaches, debris will be removed. When clearing natural debris blockages (e.g., branches, fallen trees, soil from landslides) from the channel, only remove the minimum amount of debris necessary to maintain flow conveyance (i.e., prevent significant backwatering or pooling). Non-natural debris (e.g., trash, shopping carts, etc.) will be fully removed from the channel.

Measure #	Category	VHP Avoidance and Minimization Measure
111	Post-Construction	If bank failure occurs due to debris blockages, bank repairs will only use compacted soil, and will be re-seeded with native grasses or sterile nonnative hybrids and stabilized with natural erosion control fabric. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. If compacted soil is not sufficient to stabilize the slope, bioengineering techniques must be used. No hardscape (e.g., concrete or any sort of bare riprap) or rock gabions may be utilized in streams not managed for flood control except in cases where infrastructure or human safety is threatened (e.g., undercutting of existing roads). Rock riprap may only be used to stabilize channels experiencing extreme erosion, and boulders must be backfilled with soil and planted with willows or other native riparian species suitable for planning in such a manner. If available, local native species will be utilized as appropriate.
112	Post-Construction	Pumps and generators shall be maintained and operated in a manner that minimizes impacts to water quality and aquatic species.
113	Post-Construction	The channel bottom shall be re-graded at the end of the work project to as close to original conditions as possible.
114	Post-Construction	Erosion control methods shall be used as appropriate during all phases of routine maintenance projects to control sediment and minimize water quality impacts.
115	Post-Construction	All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods will be thoroughly inspected for wildlife by properly trained construction personnel before the pipe is subsequently buried, capped, or otherwise used or moved in anyway.

3 ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

3.0 Introduction

This section presents the environmental setting and evaluation of impacts of the program for the 18 resource topics analyzed in this Program EIR. Section 3.0.1 introduces the common features used to assess impacts for each of these topic areas, including the regional environmental setting, the definition of the project baseline, and the definition of the analytical time horizon. This section also describes the overall organization of the chapter and the approach to assessing impacts. Finally, this section identifies topic areas that were evaluated and found to have no potential for significant impacts based on the scope and nature of the program activities and provides the justification for eliminating them from detailed analysis in this EIR.

3.0.1 Regional Environmental Setting

As described in Section 2.3, Program Area and Work Sites, the program area covered by the updated PMP encompasses all of Valley Water's raw, treated, and recycled water conveyance pipeline systems and related facilities and appurtenances in Santa Clara County and limited portions of San Benito and Merced counties. Program work sites encompass the areas surrounding pipelines and other associated infrastructure that is covered under the updated PMP (e.g., access roads, tanks, pump stations, turnouts), to be used to provide the necessary clearance to accommodate covered activities. The updated PMP area also includes streams, fields, storm drains, and channels where releases of pipeline water can occur.

Sections 3.1, Hydrology, through 3.18, Agriculture and Forestry, include detailed descriptions of the environmental settings specific to individual resource topics. These descriptions are included in the respective environmental setting discussions. The environmental setting section for each resource topic defines the study area specific to that resource topic.

3.0.2 Baseline Conditions

According to Section 15125 of the State CEQA Guidelines, an EIR must include a description of the existing physical environmental conditions in the program vicinity to provide the "baseline condition" against which program-related impacts are to be compared. The baseline condition typically is the physical condition existing at the time the NOP is published. The NOP for the program was published on October 17, 2023. Therefore, this PEIR assesses the program's potential impacts compared to the existing environmental conditions present at or around that time in and adjacent to the program area. This includes consideration of existing 2007 PMP activities, as appropriate.

3.0.3 Structure of the Environmental Setting and Impact Analysis

This chapter has sections analyzing the following resource topics:

- 3.1 - Hydrology and Water Quality
- 3.2 - Geology and Soils
- 3.3 - Biological Resources
- 3.4 - Hazards and Hazardous Materials
- 3.5 - Traffic and Transportation
- 3.6 - Cultural Resources
- 3.7 - Tribal Cultural Resources
- 3.8 - Air Quality
- 3.9 - Greenhouse Gas Emissions
- 3.10 - Energy
- 3.11 - Noise
- 3.12 - Aesthetics
- 3.13 - Wildfire
- 3.14 - Utilities and Service Systems
- 3.15 - Land Use and Planning
- 3.16 - Recreation
- 3.17 - Public Services
- 3.18 - Agriculture and Forestry Resources

3.0.4 General Methodology

CEQA requires a lead agency to determine the significance of all environmental impacts (California PRC Section 21082.2; CEQA Guidelines Section 15064). A threshold of significance for a given environmental impact defines the level of effect above which the lead agency will consider impacts to be significant and below which it will consider impacts to be less than significant. Thresholds of significance are identifiable, quantitative, qualitative, or performance levels for a particular environmental effect, whichever is most applicable to each specific type of environmental impact [CEQA Guidelines Section 15064.7(a)].

This PEIR uses a variety of terms to describe the levels of significance of adverse impacts identified in the environmental analysis. The following terms are used in this PEIR:

- **Significance threshold:** A significance threshold is a criterion used by Valley Water, as lead agency under CEQA, to determine whether the magnitude of an adverse physical environmental impact would be significant.
- **Less-than-significant impact:** An impact is less than significant if the analysis concludes that the implementation of the program would not exceed the applicable significance threshold.
- **Significant impact:** An impact is significant if it would result in a substantial adverse change in the physical conditions of the environment, as determined by whether it exceeds the applicable significance threshold.

- **Significant and unavoidable impact:** An impact is significant and unavoidable if it would result in a substantial adverse physical change in the environment that cannot be feasibly mitigated to a less-than-significant level; that is, to a magnitude below the significance threshold.
- **Mitigation measure:** A mitigation measure is a feasible action that could be taken that would avoid or substantially lessen the magnitude of a significant impact. CEQA Guidelines Section 15370 defines mitigation as:
  - avoiding the impact altogether by not taking a certain action or parts of an action;
  - minimizing impacts by limiting the degree of magnitude of the action and its implementation;
  - rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
  - compensating for the impact by replacing or providing substitute resources or environments.
- **Feasibility:** Feasible means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (CEQA Guidelines Section 15364).

Environmental Analysis Structure and Approach

Each resource topic analyzed in this chapter includes the following subsections:

- Definitions (included where relevant)
- Environmental Setting
- Regulatory Setting
- Impact Assessment Methodology
- Impact Analysis

An overview of what each of these subsections contain is provided below.

Definitions

In some sections (e.g., hazards and hazardous materials, noise and vibration), technical terminology is used to provide context for the environmental setting, regulatory setting, and/or impact analysis. This subsection provides definitions for technical terms to facilitate the public's review and understanding of impacts addressed.

Environmental Setting

The environmental setting provides a point of reference for assessing the environmental impacts of the program and the program's alternatives. The environmental setting consists of background information about the resource topic to help the reader understand the resources that could be affected by the program. Specific information and structure vary depending on

the resource topic. The environmental setting information represents baseline conditions (i.e., the environmental conditions at the time the NOP was published).

Regulatory Setting

This section of each chapter describes the federal, State, and local regulations that would apply to the program and that could reduce or eliminate significant impacts. The program area primarily includes Santa Clara County and limited portions of Merced and San Benito counties. The program area overlies numerous jurisdictions, including unincorporated Santa Clara County, unincorporated San Benito County, unincorporated Merced County, Pacheco State Park (in unincorporated Merced County), and the cities and towns of Campbell, Cupertino, Gilroy, Los Altos, Los Gatos, Milpitas, Morgan Hill, Mountain View, San Jose, Santa Clara, Saratoga, and Sunnyvale. The regulatory section focuses on Santa Clara County policies and regulations because nearly all the program area is within the Santa Clara County boundary, and large portions of the program area are in unincorporated Santa Clara County.

The portion of the program area within Merced County is located primarily within Pacheco State Park, which is owned and managed by the California Department of Parks and Recreation and under State jurisdiction. Therefore, the State regulatory setting discussions for most resource topics include plans and policies under the Pacheco State Park General Plan for this portion of the program area. An approximately 0.46-mile-long segment of the Pacheco Conduit and a portion of the Pacheco Pumping Station are located in unincorporated Merced County and an approximately 4.3-mile-long segment of the Santa Clara Conduit is located in unincorporated San Benito County; therefore, the regulatory setting discussions for resource topics include plans and policies from the Merced County General Plan and the San Benito County General Plan where applicable.

Valley Water's jurisdiction and authority generally is independent of the jurisdiction and authority of other local public agencies such as cities and counties. In addition, pursuant to Government Code sections 53091(d) and (e), County and City building and zoning ordinances do not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water.

Impact Assessment Methodology

This section identifies and describes the methods and assumptions used in the environmental impact analysis and the criteria used to determine the level of significance of potential environmental impacts, presented as impact statements. Valley Water has not formally adopted "significance criteria" but instead has adapted the significance criteria from Appendix G of the State CEQA Guidelines for use in connection with the program, to determine whether the program would have significant impacts. In accordance with the State CEQA Guidelines, the checklist questions provided in Appendix G may be tailored to satisfy an individual agency's needs and project circumstances. Where appropriate, the Appendix G questions have been modified to more suitably ensure that all potential impacts have been analyzed.

Best Management Practices, Avoidance and Minimization Measures, and Santa Clara Valley Habitat Plan Conditions

Where applicable, best management practices (BMPs) from Valley Water's 2014 Best Management Practices Handbook (Appendix C), avoidance and minimization measures (AMMs) developed specifically for the updated PMP, and Santa Clara Valley Habitat Plan (VHP) conditions relevant to each resource topic are identified, and the subsequent impact analysis assumes inclusion of these BMPs, AMMs, and VHP conditions, where applicable, as part of the program. The applicable BMPs, AMMs, and VHP conditions are further discussed within the context of each evaluation when that measure can effectively reduce a potential adverse impact that could occur in the absence of the measure. An impact significance finding is then provided that would rely on implementation of the BMP, AMM, and/or VHP conditions. Note that BMPs, AMMs, and VHP conditions may reduce impacts for more than one resource topic. These instances are identified and cross-referenced throughout the impact analysis. A comprehensive list of BMPs, AMMs, and VHP conditions applicable to the PMP is provided in Chapter 2, Project Description.

Impact Analysis

The impact analysis under each impact statement describes the environmental effects of program implementation. The potential impacts of the program have been determined by comparing program implementation to baseline conditions. The significance determination for each impact also has been determined with this comparison. Program impacts are numbered sequentially in each section in accordance with the significance criteria. A summary impact statement precedes a more detailed discussion of the environmental effects of the program. The detailed discussion provides the analysis, rationale, and substantial evidence upon which conclusions have been drawn. As required by Section 15126.2(a) of the State CEQA Guidelines, direct, indirect, short-term, long-term, on-site, and/or off-site impacts have been addressed, as appropriate, for the environmental issue area being analyzed.

The analysis under each impact statement addresses impacts that could occur from implementation of the types of program tasks that comprise the PMP, including setup, staging, and access; pump-out of vaults/manholes; pipeline draining tasks, including isolation, dewatering, and refilling; ground-disturbing activities, including excavation, backfill, and construction; repair of pipeline system infrastructure; and vegetation management. The analysis focuses on tasks with the potential to result in an environmental impact under each significance criterion. Where multiple PMP tasks would have similar impacts, discussions have been combined to streamline the document.

As detailed in Chapter 2, Project Description, the scope of the updated PMP would be limited primarily to inspection and maintenance of Valley Water's existing water conveyance systems and facilities and would not expand Valley Water's water conveyance infrastructure. New appurtenances that would be installed as part of the program would be limited to small, new, permanent surge tanks and backup generators at existing program facilities. After completion of program activities, operation of the pipeline infrastructure would continue, unchanged from previous operation. Thus, the analysis herein primarily focuses on program-related construction

impacts that could result in significant impacts; however, operational impacts associated with any new, small appurtenances are also analyzed where appropriate.

Mitigation Measures

For impacts where BMPs, AMMs, and/or VHP conditions would not reduce impacts to a less-than-significant level, feasible mitigation measures are proposed. Similar to the impact nomenclature, mitigation measures are denoted by the resource topic and numbered sequentially (for example, Mitigation Measure NOI-1 or MM NOI-1). Note that a mitigation measure established under one resource topic might also reduce an impact for another resource. These occurrences are identified and cross-referenced throughout the impact analysis.

A statement of post-mitigation significance is provided based on applying the stated mitigation measures. If mitigation measures are unable to reduce an impact to less-than-significant levels, the impact analysis explains why no further mitigation is feasible.

3.0.5 Resources Eliminated from Further Analysis

This section describes the environmental resource topics for which significant effects would not occur from program implementation. The following resource topics are addressed briefly in this section and then dismissed from further analysis: Mineral Resources and Population and Housing.

Mineral Resources

Consistent with Appendix G (Environmental Checklist) of the State CEQA Guidelines, the program could have a significant impact if it would:

- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Mineral resources of significance found and extracted in Santa Clara County include construction aggregate deposits, such as sand, gravel, and crushed stone, as well as salts derived from evaporation ponds at the edge of San Francisco Bay (Santa Clara County 1994). The program area would be confined to the locations of existing program pipelines; therefore, these sites are unavailable for mineral extraction under existing conditions. Program activities would not result in the loss of availability of a known mineral resource in the program area or result in the loss of an active recovery site. The program would involve maintenance of existing pipelines and would not alter land uses, access, or subsurface areas that could impact mineral resources. No impact on mineral resources would occur, and mineral resources are not evaluated further in the PEIR.

Population and Housing

Consistent with Appendix G (Environmental Checklist) of the State CEQA Guidelines, the program could have a significant impact if it would:

- induce substantial unplanned population growth in an area, either directly or indirectly; or
- displace substantial numbers of people or housing, necessitating construction of replacement housing elsewhere.

The program would not create infrastructure that would induce unanticipated population growth. The program would include maintenance of Valley Water's existing conveyance pipelines and would not increase the capacity of the water system. The program would support Valley Water's ability to continue supplying water to meet existing customer demands. Thus, no impact on population and housing would occur from inducing population growth by the program. In addition, none of the program tasks would displace housing or people because the program would maintain existing pipelines at sites where pipelines already are present. Therefore, no displacement of housing or people would be associated with the program. Population and housing are not evaluated further in the PEIR.

3.1 Hydrology and Water Quality

This section provides an overview of the hydrology and water quality conditions in the program area; applicable regulations, policies, and standards; and a discussion of the program's potential impacts to hydrology and water quality. Information in this section was developed from the *Hydrologic and Geomorphic Conditions Technical Memorandum* (Balance Hydrologics 2024), which is provided in Appendix E.

3.1.1 Environmental Setting

The environmental setting section presents an overview of the existing hydrology and water quality conditions in the program area, including a regional overview of ground and surface water resources.

Regional Overview

The occurrence and movement of groundwater and surface water in the program region is dictated by regional climate and hydrologic characteristics but to some degree is also managed by Valley Water activities. The northern two-thirds of the program area is located within the Santa Clara Valley, which is comprised of a number of major watersheds, all of which drain north to the San Francisco Bay. The southern portion of the program area is located in the Uvas/Llagas watershed, which drains south to the Pájaro River and Monterey Bay. The program area is underlain by two major groundwater subbasins – the Llagas Subbasin that generally flows south-southeast and Santa Clara Subbasin that generally flows north-northwest. The Santa Clara Subbasin is formed of two interconnected management areas, which are the Coyote Valley and Santa Clara Plain.

Valley Water is responsible for managing water resources in Santa Clara County. Runoff from primarily rural areas in the Coastal Range is collected in ten reservoirs for storage and/or blending with imported water before being conveyed to groundwater recharge/storage facilities or drinking water treatment plants. Valley Water sells both treated surface water and groundwater to retail agencies that serve the communities within the County via their own distribution systems.

Climate

The program area has a Mediterranean climate, with almost all precipitation falling between the months of November and April. Annual average rainfall amounts vary significantly due to topography. Average rainfall conditions are the statistical mean of rainfall totals that show a wide range of values strongly influenced by global weather patterns such as the El Niño Southern Oscillation (ENSO). Periods of abundant winter precipitation and prolonged periods of drought are both frequent in the historical record.

Groundwater

Overview

Aquifers (water bearing strata) within the Santa Clara Plain, Coyote Valley, and Llagas Subbasins supply nearly half of Valley Water's total water supply. The Santa Clara Plain, which is the northern management area of the Santa Clara Subbasin is the largest and most important with respect to local water supply. Groundwater replenishment occurs both naturally and through Valley Water efforts to augment natural processes by releasing water from existing reservoirs with the goal of recharging the aquifer through streambed infiltration and percolation ponds. Percolation facilities, usually located near the basins' perimeters, are used to increase the recharge in the groundwater subbasins and compensate for the amount of water withdrawn. Valley Water actively promotes recharge to the aquifer using local and imported water applied to approximately 285 acres of percolation ponds[1] located throughout the County (Valley Water 2021).

Groundwater Quality

Valley Water has been monitoring groundwater quality since the 1940s. The water quality monitoring program includes a large network of monitoring wells and domestic supply wells which are sampled regularly for general minerals, trace metals, and physical characteristics. Groundwater in the Santa Clara Valley aquifer is of good quality, is relatively uniform, and is currently considered suitable for most beneficial uses (Valley Water 2021).

Groundwater quality and chemistry are influenced by source waters (infiltration), the geologic substrate of the aquifer, interactions between adjacent groundwater sources, and management activities. The natural background chemical signature of the groundwater is a reflection of the source water and how it becomes altered as it passes through the substrate. Water quality problems typically result from human activities. Saltwater intrusion, resulting from over withdrawals and historical land subsidence, contributed salts to portions of the Santa Clara Valley aquifer.

Typical urban and residential pollutants such as metals and oil and grease can impact groundwater. However, groundwater infiltration processes have been effective at removing these pollutants such that groundwater meets drinking water standards. Although spills and poor management of industrial chemicals and wastes can pose a potential threat to groundwater quality, these types of chemicals are rarely detected in public water supply wells (Valley Water 2021).

Surface Water

The water conveyance pipelines covered in the PMP are widely distributed throughout Valley Water's service area and traverse most of the major waterways and many smaller tributaries. In

[1] Valley Water operates 102 percolation ponds throughout the County, of which 101 ponds are off-stream and one pond, the Coyote Percolation Pond, is an instream pond.

the event that maintenance activities require draining the pipelines, many of the County waterways could serve as direct or indirect receiving waters. Water releases occurring within the program area have the potential to eventually drain to larger systems outside of the program area.

Figure 3.1-1 presents a map of the major watersheds where PMP activities are likely to take place. Major watersheds and named sub-basins likely to receive waters as part of program tasks are listed in Table 3.1-1. Major watersheds and sub-basins that are likely to receive waters are described in further detail in the *Hydrologic and Geomorphic Conditions Technical Memorandum* included as Appendix E.

Surface Water Quality

The quality of surface waters in the program area varies widely due to the large number of streams (about 150) and their inherent differences in local geology, land use patterns, and other watershed conditions. Furthermore, the availability and quality of data differs significantly for different streams according to their importance to Valley Water, their use as habitat for sensitive species, and the year, season and purposes of sample collection, rendering simple comparisons between streams problematic. In general, surface waters can be differentiated by their topographic location.

Headwater streams are supplied primarily by surface runoff during the wet season. However, during the dry season, springs (if present) can be an important contributor to water quality. The reservoirs and other impoundments operated in many watersheds capture runoff from local drainages and are often used to store imported waters. The relative proportion of each source is dependent on Valley Water management decisions, and the quality of water in streams downstream of reservoirs can also vary depending on how the reservoirs are operated.

Imported water can have a strong influence on water quality in the program area. Valley Water imports water via the South Bay Aqueduct and the San Luis Reservoir, both of which receive water from the Sacramento-San Joaquin Delta. Imported water from these sources can be routed within Valley Water's system according to supply and demand. Valley Water routinely releases imported water into streams and reservoirs to augment local sources and for groundwater recharge purposes.

Flood Potential

Flooding can be common in Santa Clara County during the rainy season. Tidal flooding along the San Francisco Bay may occur due to levee failure, and its severity is increased in areas that have experienced subsidence due to over-drafting of groundwater basins. More importantly, stormwater flooding has been a long and continuing problem. Approximately 60 square miles of the 300-square mile Santa Clara Valley floor is flood-prone (Santa Clara County 1994).

Valley Water is responsible for flood management in creeks and major drainage channels within Santa Clara County. Local drainage systems, such as storm drains, are the responsibility of cities and counties. The conveyance capacity of channels is maintained and enhanced through implementation of Valley Water's Stream Maintenance Program (Valley Water 2012).

Figure 3.1-1 Major Watersheds within the Program Area

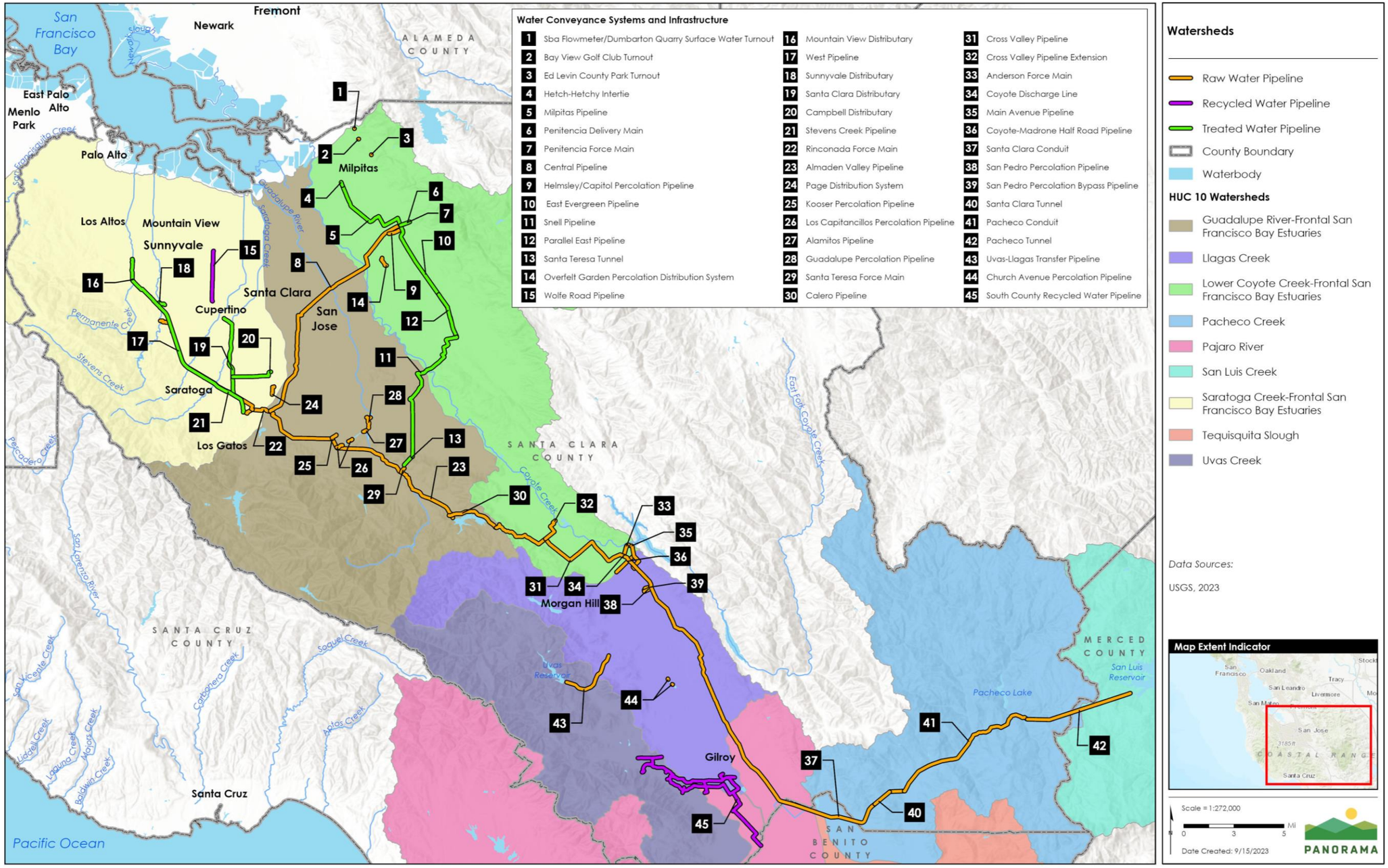


Table 3.1-1. Major Watersheds and Sub-Basins in Proximity to Pipelines in the PMP

Jurisdiction	Major Watershed	Sub-Basins	Sub-Basins
San Francisco Bay Regional Water Quality Control Board	Calabazas Creek	Prospect Creek Regnart Creek	Rodeo Creek
San Francisco Bay Regional Water Quality Control Board	Coyote Creek	Berryessa Creek Calera Creek Cochran Channel Fisher Creek Flint Creek Los Coches Creek Lower Penitencia Creek Lower Silver Creek Miguelita Creek North Babb Creek	Norwood Creek Quimby Creek Ruby Creek Sierra Creek South Babb Creek Thompson Creek Tularcitos Creek Upper Penitencia Creek Upper Penitencia Diversion Upper Silver Creek
San Francisco Bay Regional Water Quality Control Board	Guadalupe River	Alamitos Creek Calero Creek Canoas Creek Golf Creek	Guadalupe Creek Lone Hill Creek Los Gatos Creek Randol Creek Ross Creek
San Francisco Bay Regional Water Quality Control Board	Permanente Creek	Heney Creek	Stevens Creek
San Francisco Bay Regional Water Quality Control Board	San Tomas Aquino Creek	Saratoga Creek Smith Creek	Wildcat Creek
Central Coast Regional Water Quality Control Board	Pajaro River/Llagas Creek	Alamias Creek Center Creek Church Creek Corralitos Creek Dexter Creek Foothill Creek Hayes Creek Jones Creek Live Oak Creek Madrone Channel	New Creek Panther Creek Rucker Creek San Martin Creek San Pedro Ponds San Felipe Lake San Ysidro Creek Skillet Creek South Corralitos Creek Tennant Creek
	Uvas Creek	Sycamore Creek	
	Pacheco Creek	Elephant Head Creek	Ortega Creek

Valley Water maintains several rain gauges and telemetry sensors in its streams and reservoirs. The data from these gages and sensors are archived and shared via Valley Water's Surface Water Data Portal (https://alert.valleywater.org/). Valley Water also assists the National Weather Service, which is responsible for issuing flood warnings, by developing and sharing the thresholds associated with different levels of flooding. providing maintenance and access to the Automated Local Evaluation in Real Time (ALERT) system; a system of rain gages, streamflow gages, and reservoir gages. Threshold discharge associated with moderate flooding Flood stage for streams in the program area streams with ALERT system gauges on them are provided in **Error! Not a valid bookmark self-reference.**. Smaller streams include Calero Creek below Calero Reservoir where moderate flooding can be expected flood stage is at 350 cubic feet per second (cfs). Larger streams include the Guadalupe River at US Highway 101 where moderate flooding can be expected flood stage is at 14,000 cfs. The data represented in **Error! Not a valid bookmark self-reference.** are existing conditions presented to provide context to flow rates relating to water release impacts provided in Chapter 3, these numbers are subject to change. Figure 3.1-2 presents mapped Federal Emergency Management (FEMA) floodplains and floodways within the area of potential PMP activities.

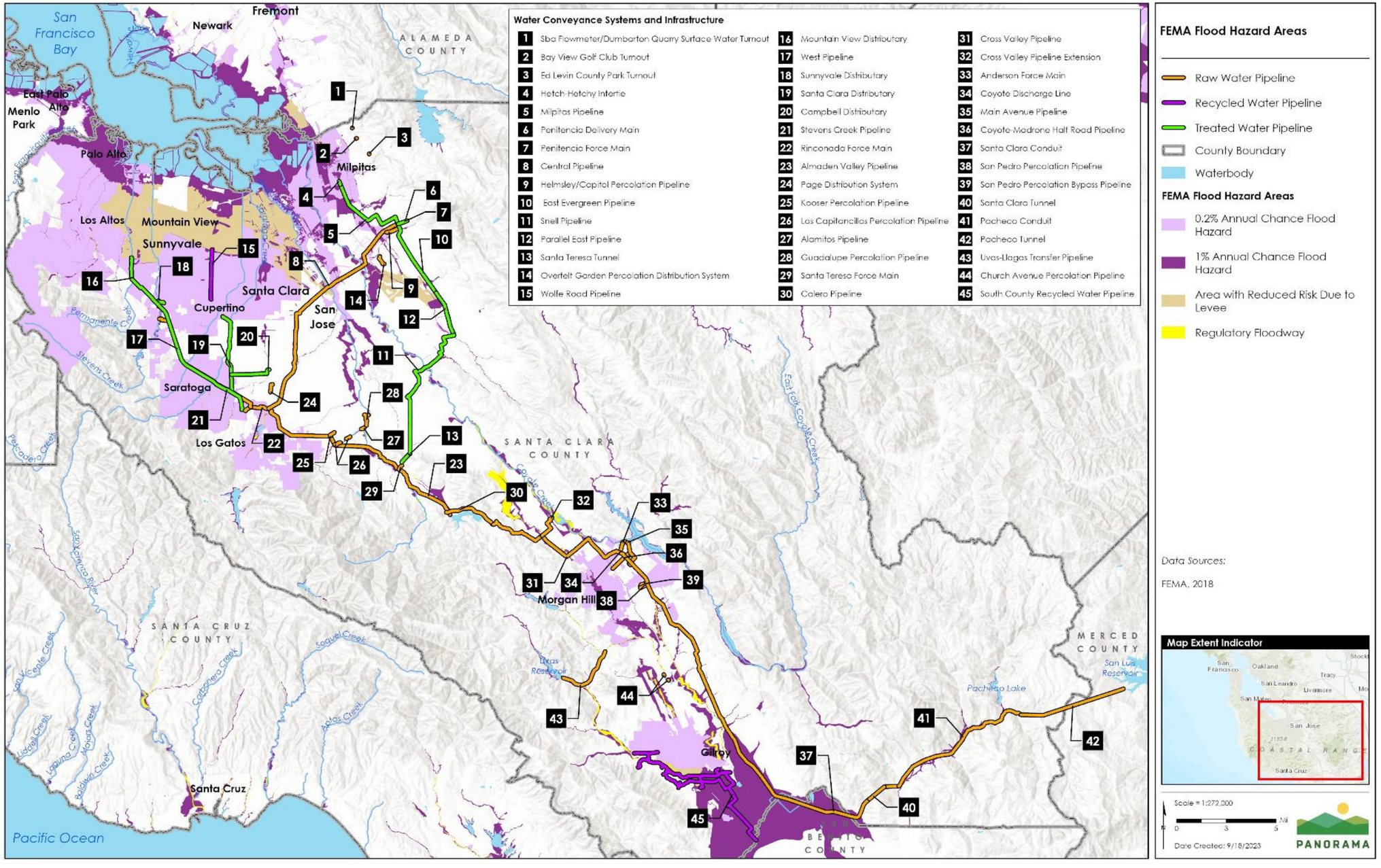
Table 3.1-2 Threshold Discharge for Moderate Flooding at Relevant Valley Water Stations

Station ID	Station Description	Watershed	Discharge, cfs
5012	Coyote Creek below Coyote Reservoir (USGS)	Coyote	3,750
5058	Coyote Creek at Edenvale	Coyote	3,750
5082	Coyote Creek at Madrone	Coyote	3,750
5083.1	Upper Penitencia Creek at Dorel Dr	Coyote	1,500
5097	Coyote Creek at CA-237 (USGS)	Coyote	3,750
5098	Coyote Creek at William St	Coyote	3,750
5100.1	Lower Penitencia Creek at Machado Ave	Coyote	850
5127	Coyote Creek at Berryessa Rd	Coyote	3,750
5136.2	Berryessa Creek at Old Piedmont Road	Coyote	500
5013	Calero Creek below Calero Reservoir	Guadalupe	350
5023.2	Guadalupe River above Almaden Expwy	Guadalupe	5,500
5050	Los Gatos Creek at Lincoln Ave	Guadalupe	7,000
5051	Ross Creek at Cherry Ave	Guadalupe	1,250
5059	Los Gatos Creek at Lark Ave	Guadalupe	6,000

Station ID			
5067	Los Gatos Creek below Lexington Reservoir (Low Flow)	Guadalupe	3,000
5109	Guadalupe River at US-101 (USGS)	Guadalupe	14,000
5138	Guadalupe River at Alma Ave	Guadalupe	5,800
5032	Permanente Creek above Berry Ave	Lower Peninsula	1,600
5035	Stevens Creek above CA-85 near Central Ave	Lower Peninsula	6,000
5044	Stevens Creek below Stevens Creek Reservoir	Lower Peninsula	3,000
5112	San Francisquito Creek at Stanford (USGS)	Lower Peninsula	5,500
5120	Permanente Creek at Rancho San Antonio Park	Lower Peninsula	1,250
5086	Uvas Creek at W Luchessa Ave	Pajaro	6,800
5117	West Little Llagas below Edmundson Ave	Pajaro	600
5024	San Tomas Creek above Williams Rd	West Valley	3,500
5033	Hale Creek near Magdalena Ave	West Valley	400
5074	Sunnyvale East Channel at Bayshore Frontage Rd	West Valley	750

Source: Valley Water, n.d.

Figure 3.1-2 Mapped FEMA Floodplains and Floodways within the Program Area



3.1.2 Regulatory Setting

Federal Regulations, Policies, and Standards

Section 402 of the Clean Water Act

The CWA authorizes the U.S. Environmental Protection Agency to regulate water quality in California by controlling the discharge of pollutants to water bodies from point and non-point sources through the National Pollution Discharge Elimination System (NPDES).

Santa Clara County is subject to two regional NPDES permits: the San Francisco Bay Municipal Regional Permit for watersheds that drain to the San Francisco Bay and the Central Coast Water Quality Control Board Phase II NPDES permit for watersheds that drain south to the Pajaro River.

The SWRCB has established a Municipal Regional Stormwater permit (Regional Municipal Permit) for the Bay Area Counties (Order No. R2-2022-0018, NPDES General Permit No. CAS612008) to regulate stormwater discharges in these areas. As a municipal separate storm sewer system (MS4) operator, Valley Water is required to comply with its provisions, which include construction- and post-construction-phase stormwater runoff controls and water quality BMPs. To assist MS4 operators, Santa Clara County developed the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) C.3 Stormwater Handbook (EOA, 2016).

If individual projects completed under the proposed program may disturb more than 1 acre of land (in aggregate, for each individual project), Valley Water would be required to submit a Notice of Intent to the SWRCB and apply for coverage under the NPDES Construction General Permit. Administration of these permits has not been delegated to cities, counties, or Regional Boards but remains with the SWRCB. Enforcement of permit conditions, however, is the responsibility of Regional Board staff, assisted by local municipal or County staff. The County of Santa Clara will require Valley Water to prepare a Storm Water Pollution Prevention Plan (SWPPP) and submit it for review prior to commencing construction (for maintenance activities requiring excavation). Once ground disturbance begins, the SWPPP must be kept on-site and updated as needed while construction progresses. The SWPPP details the site-specific BMPs to control erosion and sedimentation and maintain water quality during the construction phase. The SWPPP also contains a summary of the structural and non-structural BMPs to be implemented during the post-construction period, pursuant to the nonpoint source practices and procedures encouraged by the SCVURPPP and the RWQCB.

Section 404 and 401 of the Clean Water Act

CWA Section 404 established the program to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Under this regulation, discharges of dredged or fill material into waters of the U.S. require obtaining a permit from the applicable RWQCB prior to initiation.

Under Section 401 of the CWA, the United States Army Corps of Engineers (USACE) administers permitting programs that authorize impacts to "waters of the United States" including "wetlands" and "other waters." Such impacts may not be permitted until the SWRCB, acting through its regional boards, certifies that the activities covered by the permit will not violate water quality standards. Certification must be consistent with the requirements of the federal CWA, CEQA and California Endangered Species Act, and with the SWRCB's mandate to protect beneficial uses of waters of the state.

The RWQCB has adopted the USACE policy that there shall be "no net loss" of wetlands. Thus, prior to waiving or certifying water quality, the RWQCB requires a proposed project to demonstrate there are no impacts on existing wetlands, or, if such impacts are unavoidable, that they are fully mitigated.

State Regulations, Policies, and Standards

California Porter-Cologne Act

The Porter-Cologne Act requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State (any surface water or groundwater, including saline waters) to file a report of discharge" with the local RWQCB by applying for waste discharge. The RWQCB determines if a project should be regulated pursuant to this act based on the likelihood that it would pose any "threat" to water quality. The Regional Boards guide and regulate water quality in streams and aquifers through designation of beneficial uses and establishment of water quality objectives that must be met to protect these uses. Beneficial uses and objectives for each region are described in the Water Quality Control Plan or Basin Plan for that region. Areas that drain to the San Francisco Bay are regulated by the San Francisco Bay RWQCB (Region 2) Basin Plan which was last updated in 2023 (San Francisco Bay RWQCB 2023). Areas that drain to the Pajaro River are regulated by the Central Coast RWQCB (Region 3) Basin Plan which was last updated in 2019 (Central Coast RWQCB 2019). Beneficial water uses are designated in the Basin Plan for local aquifers, streams, marshes, and rivers, as well as water quality objectives that must be met to protect these uses. Basin Plans are periodically amended and undergo a triennial review process; therefore, Basin Plan updates are likely to occur over the life of the PMP. The PMP would reference and work within limits set by the most up-to-date basin plans. Regional Board policy is to protect uses that might reasonably apply to the tributaries of listed waters.

The *Hydrologic and Geomorphic Conditions Technical Memorandum* (Appendix E) summarizes these beneficial uses for San Francisco Bay RWQCB and Central Coast RWQCB by water body, as well as lists the water quality objectives established in the respective Basin Plans to protect the beneficial uses from potential pollutants. Beneficial uses that apply to potential receiving waters in the program area include agricultural supply, municipal and domestic supply, freshwater replenishment, groundwater recharge, industrial service and process supply, commercial and sport fishing, cold and warm freshwater habitat, estuarine habitat, fish migration, fish spawning, wildlife habitat, preservation of rare and endangered species, preservation of

biological habitats of special significance, water contact recreation, noncontact water recreation, and navigation.

In addition to pollution such as nitrate, mercury, and volatile organic compounds, the San Francisco Bay RWQCB considers the placement of clean fill in waters of the State to constitute "pollution," because it can potentially alter existing water quality, which may adversely affect its beneficial uses.

303(d) List

The State of California is required by Section 303(d) of the federal CWA to provide the USEPA with a list of water bodies considered by the State to be impaired (i.e., not meeting water quality standards and not supporting their beneficial uses). The list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment, typically a Total Maximum Daily Load (TMDL). The TMDL specifies the amount of the target pollutant that the waterbody can sustain on a daily or annual basis. The 303(d) list is used by the USEPA to prepare the federal Clean Water Act Section 305(b) Report on Water Quality. Santa Clara County waters included in the 303(d) list identified in 2018 by the USEPA (SWRCB 2018) are presented in the *Hydrologic and Geomorphic Conditions Technical Memorandum* (Appendix E). New listings may occur over the life of the PMP and Valley Water will stay current with up-to-date 303d listings. The next set of listings for streams in Santa Clara County is expected to be sent to the USEPA in 2024.

California Fish and Game Code

Existing stream channels in California are protected under sections 1600-1603 of the State Fish and Game Code. These regulations specify that it is a landowner's responsibility to obtain a state permit before undertaking any modifications within an existing stream channel up to the top of bank. Stream channels are defined by CDFW as exhibiting evidence of scour, having a definable bank, or having or being capable of supporting riparian vegetation.

Sustainable Groundwater Management Act

In 2014, a new law was signed intended to create a framework for sustainable management of groundwater resources in California. The law, called the Sustainable Groundwater Management Act (SGMA), requires governments and water agencies with management responsibilities in medium- and high-priority subbasins to halt groundwater overdraft through development of a Groundwater Sustainability Plan (GSP). Valley Water has prepared two groundwater management plans for the Santa Clara and Llagas Subbasins since SGMA was passed, the first in 2016 and the current version in 2021 (Valley Water 2021).

California Toxics Rule

On May 18, 2000, the EPA published the California Toxics Rule (CTR) in the Federal Register, adding Section 131.38 to Title 40 of the CFR and establishing new water quality objectives for some constituents in the Basin Plans. On May 22, 2000, the Office of Administrative Law approved, with modifications, the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Phase 1 of the Inland Surface Waters

Plan and Enclosed Bays and Estuaries Plan). The Policy establishes implementation procedures for three categories of priority pollutant criteria or water quality objectives. These are: (1) criteria promulgated by the EPA in the National Toxics Rule that apply in California, (2) criteria proposed by the EPA in the California Toxics Rule, and (3) water quality objectives contained in RWQCB water quality control plans (basins plans).

NPDES Permitting

Pipeline Dewatering

Dewatering of raw and treated drinking water pipelines is covered under the National Pollutant Discharge Elimination System Permit for Drinking Water System Discharges to Waters of the United States (General Order WQ-2014-0194-DWQ). A Statewide Discharge Permit (No. 4DW062) was issued to Valley Water by the State Water Resources Control Board under this General Order in December 2015. This Order authorizes drinking water system discharges resulting from a water purveyor's essential operations and activities undertaken to comply with the federal Safe Drinking Water Act, the California Health and Safety Code, and the SWRCB's Division of Drinking Water permitting requirements. Discharges authorized by this Order are composed solely of water that is dedicated by drinking water facilities for the primary purpose of providing safe and reliable drinking water. Additionally, discharges authorized under this Order are determined to not adversely affect or impact beneficial uses of the receiving waters when properly managed through best management practices. Such discharges include, but are not limited to, discharges from supply wells, transmission systems, water treatment facilities, water distribution systems, and storage facilities. This permit is utilized for raw and treated pipeline releases for maintenance activities. The permit defines acceptable monitoring protocols, reporting and records retention requirements.

Construction General Permit

The State of California adopted the current Construction General Permit, Order No. 2022-0057-DWQ, on September 8, 2022. SWRCB Water Quality Order 2022-0057-DWQ (Construction General Permit) regulates construction site stormwater management. Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the general permit for discharges of stormwater associated with construction activity. This requirement includes linear projects that disturb 1 or more acres. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

Permit applicants are required to submit a Notice of Intent to SWRCB and to prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on pollutants. The BMPs identified are directed at implementing both sediment- and erosion-control measures and other measures to control chemical contaminants. The SWPPP must also include descriptions of the BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (post-construction BMPs). The SWPPP must contain a visual monitoring

program, a chemical monitoring program for "nonvisible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a waterbody listed on the CWA 303(d) list for sediment.

Recycled Water Policy

The CCR, Title 22, Division 4, Chapter 3, which was last updated in 2014, describes reuse criteria that are referred to as the Uniform Statewide Recycling Criteria (Uniform Recycling Criteria), which establish the water quality standards, level of treatment, and use areas for recycled water. The Uniform Recycling Criteria define limitations for the application of recycled water based on level of treatment and specified use, such as landscape and agricultural irrigation, landscape impoundments, industrial or commercial cooling, and golf course irrigation. The level of treatment required in these statewide criteria for approved uses of recycled water depends on the potential for human contact with recycled water. The Uniform Recycling Criteria also define the use areas for recycled water including specifications for irrigation and impoundment of recycled water near a domestic water supply well, and specifications for recycled water use for unrestricted public areas.

The State Water Resources Control Board (State Water Board) initially adopted a general permit for landscape irrigation uses of recycled water (Order WQ 2009-0006-DWQ) as required by Water Code Section 13552.5, and which was updated following approval of Assembly Bill 1481 in 2007. The State Water Board subsequently adopted Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW) in 2016 in accordance with a 2014 Proclamation of the Governor. These Water Reclamation Requirements replaced the General Waste Discharge Requirements for Recycled Water Use (Order WQ 2014-0090-DWQ) and offered permit coverage for non-potable uses of recycled water.

Order WQ 2016-0068-DDW (General Order) establishes standard conditions for recycled water use and conditionally delegates authority to an administrator to manage a water recycling program and issue water recycling permits to recycled water users. The General Order authorizes the use of recycled water statewide for non-potable uses including but not limited to landscape irrigation, irrigation of crops and pastureland, construction, firefighting, hydrostatic testing, and other beneficial uses described in more detail in the Uniform Recycling Criteria. By regulating the use of recycled water to those approved by the Uniform Recycling Criteria, the General Order would ensure the protection of public health.

The General Order authorizes and encourages the use of recycled water by producers, distributors, and users for non-potable uses consistent with the requirements of the Uniform Recycling Criteria. In addition, the General Order includes requirements for storage and application of recycled water to protect water quality and public health. The General Order does not cover groundwater recharge activities, disposal of treated wastewater, or potable reuse for groundwater recharge or reservoir water augmentation. These activities are separately permitted by the applicable RWQCB.

Prior to the adoption of statewide general orders for recycled water use, such as Order WQ 2009-0006-DWQ and Order WQ 2016-0068-DDW, some regional water boards developed general WDRs and waivers of WDRs for the use of recycled water. The San Francisco Bay Regional Water Quality Control Board adopted Order 96-011, General Water Reuse Requirements for Producers and Distributors of Recycled Water, under which producers could authorize specific non-potable recycled water projects that met the criteria of the order. The General order was subsequently adopted to create statewide consistency in the permitting of recycled water projects and to better manage staff resources by reducing redundancy in permit development. In adopting the General order, the State Water Board stated that regulatory coverage under existing regional water board general orders and conditional waivers for the non-potable use of recycled water would be terminated within three years of adoption of the order (i.e., June 7, 2019), and that the regional water board would transition those enrollees to be covered under the General Order.

Pacheco State Park General Plan

The California State Park and Recreation Commission approved the Pacheco State Park General Plan in 2006, to provide guidelines for protecting park resources (California State Park and Recreation Commission 2006). The following goals from the Pacheco State Park General Plan are related to hydrology and water quality (California State Parks 2006):

Goal RES-WQ1 Prevent degradation of the Park's wetlands, ponds, springs and other water courses related to trampling, surface runoff, and sedimentation.

Goal RES-WQ3 Design, construct, and maintain buildings, roads, trails, campsites, and associated infrastructure to minimize stormwater runoff, promote quality groundwater recharge, and prevent soil erosion.

Guidelines Review and incorporate water quality protection standards and control measures available in the Water Quality Control Board's Basin Plans for the region.

Consult the Clean Water Act for current stormwater management guidelines and comply with NPDES requirements where applicable.

Local Regulations, Policies, and Standards

Santa Clara County

Santa Clara County General Plan

Adopted in 1994, the Santa Clara County General Plan guides long-term planning for the county. The Resource Conservation Chapter of the General Plan provides strategies, policies, and implementation actions for water supply resources, water quality, and watershed management (Santa Clara County 1994). Strategies and policies relevant to the PMP include:

Strategy 1: Reduce non-point source pollution.

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: effective non-point source pollution control; restoration of wetlands, riparian areas, and other habitats which serve to improve Bay water quality; and 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: erosion and sedimentation; organic matter and wastes; pesticides and herbicides; effluent from inadequately functioning septic systems; effluent from municipal wastewater treatment plants; chemicals used in industrial and commercial activities and processes; industrial wastewater discharges; hazardous wastes; and non-point source pollution.

Strategy 3: Prepare and implement comprehensive watershed management plans

General Plans of Incorporated Cities within Santa Clara County

The program area includes pipeline systems that traverse various incorporated cities and towns in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to hydrology and water quality:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2010)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The hydrology- and water quality-related policies and guidelines in these general plans commonly encourage water quality protection, drought preparedness, water conservation, watershed protection, recycled water expansion, flood protection, and proper stormwater runoff management.

San Benito County

San Benito County General Plan

Adopted in 2015, the San Benito County General Plan 2035 guides long-range planning efforts for the county (San Benito County 2015). The Natural and Cultural Resources Element of the General Plan specifically provides goals, policies, and implementation programs related to water quality. These include protecting water quantity and quality in natural water bodies and groundwater basins and avoiding overdraft of groundwater resources.

Merced County

Merced County General Plan

Adopted in 2013, the 2030 Merced County General Plan is an overarching policy document that serves to guide planning and goals for development and growth throughout the county (Merced County Board of Supervisors 2013). The Water Element of the general plan recognizes that water is a critical resource for the County's economy and future growth. The General Plan specifically identifies goals and policies to ensure reliable water supplies, protect surface and groundwater quality, and maximize efficient use and reuse of water.

Santa Clara Valley Urban Runoff and Pollution Prevention Program

The SCVURPPP is an association of thirteen cities and towns in Santa Clara Valley, the County of Santa Clara, and Valley Water, that share a common NPDES municipal stormwater permit to discharge stormwater to South San Francisco Bay. Other SCVURPPP member agencies (co-permittees) include the cities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San José, Santa Clara, Saratoga, and Sunnyvale. SCVURPPP and member agencies implement pollution prevention, source control, monitoring and outreach programs aimed at reducing pollution in stormwater runoff, protecting water quality and beneficial uses of San Francisco Bay and Santa Clara Valley creeks and rivers.

SCVURPPP also cooperates with the Santa Clara Basin Watershed Management Initiative, which was established by USEPA, the SWRCB, and the San Francisco Bay RWQCB to manage water resources in Santa Clara Basin watersheds.

Valley Water

Water Resources Protection Ordinance (as amended by Ordinance 08-1)

The Water Resources Protection Ordinance (as amended by Ordinance 081) was adopted by the Valley Water Board to help implement the Guidelines and Standards for Land Use near Streams (Santa Clara Valley Water Resources Protection Collaborative 2006). The ordinance is intended to protect the water resources managed by Valley Water; it provides a set of model guidelines and standards for land use along stream corridors and regulates access to and use of Valley Water's facilities and easements. The ordinance specifies the project review and permitting process for projects located within 50 feet of a creek or waterway or within 50 feet of a Valley Water-owned property or easement. The Water Resources Protection Manual provides guidance for complying with the ordinance.

3.1.3 Impact Assessment Methodology

Potential impacts related to hydrology and water quality are analyzed based on the potential for the program to result in substantial changes in surface or groundwater quality or quantity during program activities. Impacts are assessed based on the program's level of direct and indirect physical impact on surface water and groundwater in the vicinity, including drainage flow and water quality. Impacts from program activities were assessed against applicable regulations, policies, and standards presented in Section 3.1.2, Regulatory Setting, to evaluate any potential program conflicts.

Significance Criteria

The impacts of the program on hydrology and water quality would be considered significant if they exceeded the following standard of significance:

- **Impact HYD-1:** Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- **Impact HYD-2:** Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- **Impact HYD-3:** 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 that would:
  - Result in substantial erosion or siltation on- or off-site;
  - substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off-site;
  - create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff; or
  - impede or redirect flood flows.
- **Impact HYD-4:** Result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- **Impact HYD-5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix D) to avoid and minimize adverse effects on the environment that could result from the program. These BMP conditions are included as part of the program, and the impact analyses were conducted assuming application of these practices and conditions. The following BMPs related to hydrology and water quality from Valley Water's Best Management Practices Handbook are applicable to the program:

- **BMP WQ-1:** Conduct Work from Top of Bank

- **BMP WQ-3:** Limit Impact of Pump and Generator Operation and Maintenance
- **BMP WQ-4:** Limit Impacts from Staging and Stockpiling Materials
- **BMP WQ-5:** Stabilize Construction Entrances and Exits
- **BMP WQ-8:** Minimize Hardscape in Bank Protection Design
- **BMP WQ-9:** Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
- **BMP WQ-10:** Prevent Scour Downstream of Sediment Removal
- **BMP WQ-11:** Maintain Clean Conditions at Work Sites
- **BMP HM-7:** Restrict Vehicle and Equipment Cleaning to Appropriate Locations
- **BMP HM-8:** Ensure Proper Vehicle and Equipment Fueling and Maintenance
- **BMP HM-9:** Ensure Proper Hazardous Materials Management
- **BMP HM-10:** Utilize Spill Prevention Measures

Program-Specific Avoidance and Minimization Measures

As described in Chapter 2, Project Description, Valley Water would implement specific AMMs as part of the program to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to hydrology and water quality are provided in Table 3.1-3.

Table 3.1-3. Hydrology- and Water Quality-Related AMMs

AMM No.	AMM Requirements
AMM HAZ-1	**Aquatic Protection from Hazardous Wastes.** Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that may be hazardous to aquatic life will be prevented from contaminating the soil and/or entering waters of the State. Any of these materials, placed within or where they may enter a stream or lake, will be removed immediately.
AMM HAZ-2	**Secondary Containment and Storage.** All chemicals that are stored in staging areas will be stored in secondary containment capable of containing 110 percent of the primary container. Proper storage and security will be implemented so that chemicals are not spilled or vandalized during non-working hours.
AMM HAZ-3	**Equipment and Fluid Storage.** Valley Water will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels. All equipment will be stored in a secure area, away from any channel. Between October 15 and April 15 (and depending on rain patterns, possibly before and after these dates as well), all equipment fluid storage areas will be provided with an impermeable cover, to prevent contact with stormwater.
AMM HYD-1	**Stormwater Control and Pollution Prevention.** To prevent stormwater pollution, the applicable measures from the following list will be implemented: 1. Where practicable, maintain a vegetated buffer strip between staging/excavation areas and receiving waters in accordance with recommendations laid out in the California Stormwater Quality Association handbook: 50 feet plus four times the percent slope of the land measured between the road and top of bank. [Source: CASQA 2019]

AMM No.	AMM Requirements
	2. Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. this AMM does not apply to the channel bed and areas below the Ordinary High Water Mark in creeks 3. The preference for erosion control fabrics will be to consist of natural fibers; however, upland 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. 4. Erosion control measures will be installed according to manufacturer's specifications. 5. To prevent stormwater pollution, the appropriate measures from, but not limited to, the following list will be implemented: – Silt Fences – Straw Bale Barriers – Brush or Rock Filters – Storm Drain Inlet Protection – Sediment Traps or Sediment Basins – Erosion Control Blankets and/or Mats – Soil Stabilization (i.e. tackified straw with seed, etc.) – Straw mulch. 6. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences).
AMM HYD-2	**Obtain Storm Drain Capacity.** Valley Water will obtain storm drain capacity information from the responsible municipality prior to a release to a storm drain. Release rates to the storm drain will be maintained below its conveyance capacity. Valley Water will verify where the storm drain releases to surface water to determine water quality monitoring locations. Recycled water shall only be released to approved facilities per the class of wastewater being released..
AMM HYD-3	**Erosion Control Plan.** Prior to any ground disturbing work Valley Water shall prepare an Erosion Control Plan. At a minimum, the plan shall include: • A proposed schedule of grading activities • Identification of any critical areas of high erodibility potential and/or unstable slopes and sensitive habitat areas. • Contour and spot elevations indicating runoff patterns before and after grading • Identification of erosion control measures on slopes, lots, and streets. Measures will be based on recommendations contained Santa Clara Valley Urban Runoff Pollution Prevention Program [2016], which directs practitioners to the most up-to-date California Stormwater Quality Association construction BMP manual. • Soil stabilization techniques such as short-term biodegradable erosion control blankets and hydroseeding

AMM No.	AMM Requirements
AMM HYD-4	**Consider Water Release Volume Reduction Options.** Water release volume reduction options (such as performing maintenance activities with partially full pipelines, employing sectioning valves, and/or opportunities for reuse of water) will be considered prior to draining the pipeline.
AMM HYD-5	**Flow Diversion Measure Implementation.** Where practicable, flows will be diverted around actively eroding areas, or areas that may erode when subjected to release flows in order to avoid the following: damage to Valley Water property or adjacent property; threats to public safety; in-channel sedimentation and/or water quality concerns or other beneficial uses such as riparian habitat or recreation. Flow diversion methods might include use of flexible piping and/or placement of gravel bags to alter flow direction, or equivalent measures. The new flow path and release point will be monitored for signs of erosion.
AMM HYD-6	**Erosion Control and Dewatering Design.** To protect exposed soil and vegetated surfaces from erosion, existing adequate hard infrastructure (e.g., concrete, quick setting concrete, or rip rap spillways and bubblers/dissipators) or temporary dewatering measures (e.g., visqueen spillways), shall be used for all water releases. Visqueen spillway design can include a wattle or gravel bag perimeter with a temporary hose that terminates into a geotextile bag to dissipate flows and filter out sediments, or debris that may be in a pipeline. Water releases will not occur directly over soil which may erode into receiving watercourses or directly to receiving watercourse in such a way that erosion could occur at the release point.
AMM HYD-7	**Monitor Receiving Waters.** During releases, receiving water will be monitored by a trained individual for temperature, dissolved oxygen, turbidity, and pH to ensure that applicable Basin Plan (Central Coast Basin or San Francisco Bay Basin) standards are not exceeded and as required by in the Statewide Discharge Permit (No. 4FW062) Monitoring locations, frequency and reporting will be performed in the receiving water in accordance with the Statewide Discharge Permit requirements. Monitoring will take place immediately prior to the release and periodically through the release. If at any time monitoring indicates standards are being exceeded, the release will be halted to determine the reason for exceedance and adjustments would be made to ensure that standards are not exceeded. Data shall be reported to the State Water Quality Control Board as required by the Statewide Discharge Permit (No. 4FW062).
AMM HYD-8	**Monitor Chlorine and Ammonia Levels for Water Releases from Treated Water Pipelines.** For treated pipelines, chlorine and ammonia levels in both the released water and receiving water will be monitored by a trained individual to verify that no residual disinfection chemicals remain in excess of standards established in the applicable Basin Plan (Central Coast Basin or San Francisco Bay Basin) and as required by in the Statewide Discharge Permit (No. 4FW062). Monitoring locations, frequency and reporting will be performed in the receiving water in accordance with the Statewide Discharge Permit requirements. Monitoring will take place immediately prior to the release and periodically through the release. If at any time monitoring indicates standards are being exceeded, the release will be halted to determine the reason for exceedance and adjustments would be made to ensure that standards are not exceeded. Data shall be reported to the State Water Quality Control Board as required by the Statewide Discharge Permit (No. 4FW062)

AMM No.	AMM Requirements
AMM HYD-9	**Erosion Control and Monitoring.** The release location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, releases will be terminated until appropriate erosion control BMPs are installed. Monitoring will be conducted just before the start of the release and regularly (e.g., every hour, every 4 hours, daily) during the release. The monitoring frequency will depend on site conditions and the nature of the release.
AMM HYD-10	**Inspection and Restoration of Eroded Areas.** 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures shall be taken to correct the erosion, if necessary. Correction measures may include installation of soil stabilization measures (e.g., wattles), hydroseeding, and/or recontouring the land to its previous state.
AMM HYD-11	**Prevent Releases to Water Bodies at Flood Stage.** Valley Water shall not release water to any natural water body approaching flood stage, nor will Valley Water release water to a natural waterbody during a prolonged precipitation event in which the additional flows may put the waterbody in to flood stage.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement Santa Clara Valley Habitat Plan (VHP) conditions as part of the program. Therefore, impact analyses were conducted assuming application of these VHP conditions in VHP-covered program areas. The VHP conditions applicable to hydrology and water quality are provided in Table 3.1-4.

Table 3.1-4 VHP Conditions Applicable to Hydrology and Water Quality

Condition No.	VHP Condition
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality
Condition 4	Avoidance and Minimization for In-Stream Projects
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance
Condition 12	Wetland and Pond Avoidance and Minimization

Note: VHP Conditions 3, 4, and 5 require compliance with a suite of avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided Table 2.7-4 in Chapter 2.

3.1.4 Impact Analysis

Impact HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality (less than significant)

Common tasks are needed to perform inspections and maintenance of PMP facilities. The categories of tasks that would have the potential to impact receiving water quality include the following:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Isolation, dewatering, and refilling
- Excavation, backfill, construction, and other ground disturbance
- Repair of pipelines system infrastructure

Water quality concerns can arise from release of water from pipelines during inspection and maintenance. In addition, repairs to pipeline infrastructure may require ground disturbance which can potentially result in physical impacts to channels and riparian areas as well as water quality concerns during construction.

Surface Water

During construction, clearing, grading and other activities would increase the potential for on-site erosion, potentially leading to increased turbidity and sedimentation in receiving waters. Sedimentation in receiving waters may degrade in-stream habitat and reduce flow capacity at downstream culverts and open channels, potentially inducing or exacerbating flooding. Other pollutants that might impact surface water quality during program construction include petroleum products (gasoline, diesel, kerosene, oil, and grease), contaminants from construction debris, hydrocarbons from asphalt paving, paints, solvents, and litter.

PMP activities could require pumping-out or draining of pipelines and pipeline facilities that contain raw, treated, or recycled water, which could adversely affect water quality of receiving waters. The release of water from pipelines can also cause erosion to the bed and banks of stream which can directly impact flow dynamics and alter streambed material and impact water quality. Potential impacts to water quality are discussed by surface water type below.

Water Quality Impacts from Stormwater Runoff

Stormwater runoff has the potential to carry contaminants off-site. Program tasks that would disturb 1 acre or more would be required to obtain coverage under the Construction General Permit and would be required to implement a SWPPP. The SWPPP would contain information such as site maps showing the construction site perimeter, existing and proposed facilities, collection and release points, drainage patterns, and post-construction topography. Stormwater control measures, BMPs, and AMMs to be used must be listed in the SWPPP; various other monitoring requirements could also apply and would depend on the release point.

A SWPPP would not be required for program tasks that would disturb less than 1 acre. However, during the program, Valley Water would implement its standard BMPs which include measures to ensure proper stormwater management. BMP WQ-11 would reduce the potential for stormwater to carry debris offsite by requiring construction sites to be maintained and kept free of debris, as well as requiring all debris and unused materials to be removed upon completion. BMP HM-7 would prevent potentially contaminated water from running off site by requiring vehicles and equipment to be washed at designated areas only. BMP HM-8 would ensure that vehicle fueling and servicing do not occur in any areas that could impact a waterway. Implementation of BMP HM-9 would reduce the potential for hazardous materials

to enter a waterway. BMP HM-10 would require that harmful substances that could degrade the quality of water are not allowed to enter or be placed near any waterway. Implementation of these Valley Water BMPs and compliance with required VHP conditions in VHP-covered program areas would ensure water quality impacts from stormwater runoff would be **less than significant**.

Water Quality Impacts from Erosion and Sedimentation

Introduction of sediment, which increases turbidity in receiving waters, would be a primary water quality concern. This could come from surface disturbance or direct releases from pipelines activities.

If PMP activities were to occur within a channel, surface disturbance would increase the potential for erosion and sedimentation. During program tasks, Valley Water would implement BMP WQ-1, which would require that activities be conducted from the top of bank where feasible. BMP WQ-3 would require specific operating procedures for pumps (e.g., to avoid pumping muddy bottom water containing sediment) to minimize impacts to water quality and aquatic species. Any bank repair activities completed under the PMP would require implementation of BMP WQ-8, which would reduce impacts by requiring use of biotechnical methods that are self-sustaining and minimizing use of hardscape. To minimize erosion and sedimentation post-construction, BMP WQ-9, which would require all disturbed areas be seeded down to the ordinary high-water mark in streams.

Existing standard water release practices and procedures implemented by Valley Water are designed to reduce erosion and sedimentation potential. These standard practices and procedures include the following:

- Pulsing flow rates (valves are opened and closed to limit the amount of water flowing out) to minimize scouring and effects of rapid water-level increase and decrease.
- Manually controlling flow rates of up to 20 cfs by controlling valves and pump rates (Flow rates are ramped up slowly, then pulsed to minimize scouring and the effects of rapid water-level changes, and then ramped down).
- Using underground and aboveground energy dissipaters to reduce the velocity of the released water in certain areas.
- Gradually increasing the release rate to prevent the buildup of water in streams, rivers, or canals and avoid scouring of the channel bed and ground surfaces.

Additionally, it is common for release rates to receiving waters to be dictated by LSAAs issued by CDFW. Compliance with LSAAs is determined in the preliminary design phase with release rates commonly range between 3 and 11 cfs.

Valley Water BMPs would also be implemented to prevent silty water and debris from entering waters of the State. These include BMP WQ-4, which would ensure runoff from staging areas does not enter waterways without undergoing adequate filtration, and that construction

materials such as stockpiles are appropriately contained and covered, as well as BMP WQ-5, which would prevent soil from being tracked out from work sites.

Valley Water also would implement several AMMs as part of the program, which would further reduce impacts to water quality due to erosion and sedimentation. AMM HYD-1 would reduce sedimentation and erosion impacts from stormwater by requiring implementation of various soil stabilization and runoff entrapment techniques. AMM HYD-3 would reduce impacts of erosion and sedimentation by requiring an Erosion Control Plan be included in the Excavation Plan for any ground disturbing work. AMM HYD-7 would require water quality monitoring during draining activities to avoid exceeding RWQCB objectives and satisfy any applicable NPDES permit requirements. AMM HYD-5 would require flows to be diverted around actively eroding areas or areas that are subject to erosion due to release flows. AMM HYD-6 would protect exposed soils and vegetated surfaces by existing hard infrastructure or require temporary devices such as visqueen spillways. AMM HYD-9 and AMM HYD-10 would require use of an environmental monitor at the release location and along the drainage to termination to inspect for signs of erosion. Implementation of these program-specific AMMs and compliance with required VHP conditions in VHP-covered program areas would ensure the program's potential to result in water quality impacts from erosion and sedimentation would be **less than significant**.

Water Quality Impacts from Source Water

Other temporary impacts to water quality in receiving waters could result from introduction of the source water, which may contain constituents in concentrations that exceed Basin Plan and other agency objectives. The primary water source for water in each program pipeline is listed in Table 3.1-5.

Valley Water routinely releases reservoir and imported water to natural waterways for the purposes of groundwater recharge and riparian habitat improvement as part of existing operations and activities. However, samples collected from these source waters occasionally exceed water quality objectives established by the RWQCB. Water quality standard exceedances may be naturally occurring (such as specific conductance, pH, and turbidity) or caused by nonpoint sources of pollution (such as zinc). Use of copper sulfate as an algaecide in reservoirs at the end of the dry season and/or during droughts is a likely cause of elevated copper levels. Pipeline water releases implemented as part of the program would not increase or exacerbate the existing RWQCB exceedances because these releases would involve the release of water from the same system. Therefore, the periodic introduction of water from pipelines would not be expected to adversely affect receiving waters. The temperature of waters within the pipelines likely fluctuates considerably and could impact beneficial uses. Implementation of AMM HYD-7 would reduce potential water quality impacts from source water by requiring turbidity, dissolved oxygen, temperature, and pH to be monitored during releases, and water would be treated or release rates would be modified if RWQCB objectives reach thresholds for San Francisco Bay Region 2 and 3 objectives, as applicable. The RWQCB objectives may be occasionally updated and would be referenced directly on a per task basis. The impact would be **less than significant**.

Table 3.1-5 Water Type and Sources for Program Pipelines

Name	Water Type	Primary Source
Alamitos Pipeline	Raw	Los Capitancillos Percolation Pond (water from Almaden Valley Pipeline)
Almaden Valley Pipeline	Raw	Calero Bypass or Calero Reservoir
Anderson Force Main	Raw	Anderson Reservoir
Bayview Golf Course Turnout	Raw	South Bay Aqueduct (SBA)
Calero Pipeline	Raw	San Luis Reservoir, Anderson Reservoir
Campbell Distributary	Treated	Rinconada Water Treatment Plant (SBA, San Luis Reservoir)
Central Pipeline	Raw	SBA
Church Avenue Percolation Pipeline	Raw	Llagas Creek
Coyote Discharge Line	Raw	Coyote Pumping Plant (San Luis Reservoir), Santa Clara Conduit
Coyote–Madrone Half Road Pipeline	Raw	Anderson Reservoir and Santa Clara Conduit
Cross Valley Pipeline	Raw	San Luis Reservoir
Cross Valley Pipeline Extension	Raw	Cross Valley Pipeline (San Luis Reservoir)
East Evergreen Pipeline	Treated	Penitencia Water Treatment Plant (SBA)
Ed Levin County Park Turnout	Raw	South Bay Aqueduct
Guadalupe Percolation Pipeline	Raw	Alamitos Percolation Pond (Calero Reservoir)
Guadalupe Water System (Kooser Percolation Pipeline)	Raw	Almaden Valley Pipeline (Calero Reservoir)
Helmsley/Capitol Percolation Pipeline	Raw	Penitencia Groundwater Recharge Pond
Hetch–Hetchy Intertie	Treated	Milpitas Pipeline (SBA)
Main Avenue Pipeline	Raw	Anderson Reservoir and Santa Clara Conduit (San Luis Reservoir)
Milpitas Pipeline	Treated	Penitencia Water Treatment Plant (SBA)
Mountain View Distributary	Treated	Rinconada Water Treatment Plant (SBA, San Luis Reservoir)

Name		
Overfelt Garden Percolation System	Raw	Penitencia Creek, Mabury Percolation Pond
Pacheco Conduit	Raw	San Luis Reservoir
Pacheco Tunnel	Raw	San Luis Reservoir
Page Distribution System	Raw	Central Pipeline (SBA)
Parallel East Pipeline	Treated	Santa Teresa Water Treatment Plant (San Luis Reservoir)
Penitencia Delivery Main	Treated	Penitencia Water Treatment Plant (SBA)
Penitencia Force Main	Raw	Piedmont Valve Yard (SBA)
Rinconada Force Main	Raw	Vasona Pump Station (San Luis, Anderson Reservoir, Calero Reservoir)
San Pedro Percolation Bypass Pipeline	Raw	Santa Clara Conduit
San Pedro Percolation Pipeline	Raw	Santa Clara Conduit
Santa Clara Conduit	Raw	San Luis Reservoir
Santa Clara Distributary	Treated	Rinconada Water Treatment Plant (SBA)
Santa Clara Tunnel	Raw	San Luis Reservoir
Santa Teresa Force Main	Raw	Almaden Valley Pipeline (Calero Reservoir)
SBA Flowmeter/Dumbarton Quarry Turnout	Raw	South Bay Aqueduct
Snell Pipeline	Treated	Santa Teresa Water Treatment Plant (San Luis Reservoir)
South County Recycled Water Pipeline	Recycled	South County Regional Wastewater Authority Wastewater Treatment Plant
Stevens Creek Pipeline	Raw	Rinconada Force Main (San Luis, Anderson Reservoir, Calero Reservoir)
Sunnyvale Distributary	Treated	Rinconada Water Treatment Plant (SBA, San Luis Reservoir)
Uvas–Llagas Transfer Pipeline	Raw	Uvas Reservoir
West Pipeline	Treated	Rinconada Water Treatment Plant
Wolfe Road Pipeline	Recycled	San Lucar Pumping and Storage Facility

Water Quality Impacts from Treated Water Dechlorination and Release

Valley Water is continuously optimizing water treatment to minimize disinfection byproducts, such as trihalomethanes (THMs). This includes implementing ozone as the primary disinfectant metho at water treatment plants. However, treated water pipelines may carry potable water that has been disinfected with chloramines. Chloramine is a combination of chlorine and ammonia that is currently considered best technology for controlling the formation of THMs, also known as disinfection byproducts, and is used as a disinfectant that is added to water for public health protection. Chloraminated water is safe for people and animals to drink, and for all other general uses (US EPA 2015). Release of water from treated water pipelines could introduce chloramines, chlorine, ammonia or THMs into waterways if proper procedures are not used. THMs form when water high in organic carbon is treated with chlorine. Use of chloramines reduces the potential for THMs to form. Valley Water manages, and works to minimize, THM concentrations by adjusting disinfectant dosage, delaying chlorination, switching source water level, enhancing coagulation, and using chloramine. Valley Water also conducts tests regularly to monitor the THM levels and report to the State Water Board.. To avoid releases of treated water (where feasible), Valley Water would implement AMM HYD-4, which would require depressurization of the pipeline and endeavor to drain the entire volume to the usual recipient (customers and retailers). However, the recipient may not have storage capacity and/or there may be sections of the pipeline that cannot be gravity drained to the terminus. Water in these pipeline sections would be dechlorinated and drained or pumped out to local waterways and storm drains.

Valley Water uses either sodium bisulfite or calcium thiosulfate to dechlorinate releases from treated water pipelines. If applied in too high concentrations, these chemicals could deplete dissolved oxygen or alter pH levels in receiving waters and cause violations of standards. Depleted dissolved oxygen or large changes in pH can also affect fish and other aquatic species. The San Francisco Bay and Central Coast basin plans include dissolved oxygen and pH requirements for the protection of aquatic life. As part of the program, Valley Water would implement AMM HYD-7, which would reduce potential water quality impacts by requiring temperature, dissolved oxygen, turbidity, and pH to be monitored during releases. Additionally, AMM HYD-8 would require chlorine and ammonia levels be tested for water released from treated pipelines. Recycled water would only be released to sanitary sewers that are received at a wastewater treatment facility. Per AMM-HYD-2, and incompliance with recycled water use regulations, recycled water would only be released to sanitary sewers that are received at a wastewater treatment facility. Implementation of these measures and compliance with basin plan requirements would ensure the program's potential to result in water quality impacts from treated water release would be **less than significant**.

Groundwater

For the purposes of this analysis, the only potential pathway by which the program tasks could impact groundwater quality would be by impacting surface water quality, which could, in turn, percolate to the underlying aquifer. Valley Water is required to manage both surface water and groundwater quality to various standards set by the State and federal regulation discussed in

Section 3.1.2, Regulatory Setting. Valley Water is also required to maintain stream water quality such that use of surface water for groundwater recharge would not impact the quality of groundwater resources. Because the program BMPs and AMMs described above for surface water would protect surface water quality, the same BMPs and AMMs would reduce indirect impacts to groundwater quality. Furthermore, the stormwater treatment-related BMPs and AMMs discussed above would meet water quality treatment standards as required under Provision C.3 of the Regional Municipal NPDES Permit, relevant basin plans, and the Valley Water Groundwater Management Plan. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HYD-1.

Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the program may impede sustainable groundwater management of the basin (less than significant)

Pipeline releases to receiving waters as part of program activities would temporarily increase the water supply to receiving waters, although the increase would be minor as release flows are temporary and managed relative to the existing surface water flow and capacity of the receiving waters. The increase in surface water flow could be correlated to an increase in groundwater recharge, however, the temporary difference in flow volume would be at such minimal levels that any increase would be negligible.

When excavation is required for program activities, groundwater could be encountered. The groundwater would be pumped out according to the Sump/Vault Pumping Procedure, as presented in the Draft Updated PMP Manual (Appendix A) and tested and treated, if required by the procedure, when the water does not meet the stated quality criteria. Pumping typically takes less than 15 minutes to complete. The amount of water removed from the excavation or vault would be minor and would not measurably decrease local groundwater supplies.

Program activities could use groundwater for dust control and health and safety uses during construction, though the volume of water used would be negligible compared to Valley Water's overall groundwater supply. Therefore, the program would not deplete groundwater supplies. As described above, program activities would not impact groundwater quality in such a way that groundwater supply would become unusable. Program implementation is not expected to negatively impact groundwater supply and recharge because it directly supports Valley Water's groundwater recharge programs by keeping the raw water conveyance system (which delivers water to recharge groundwater basins) operational. The program would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the program may impede sustainable groundwater management of the basin. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HYD-2.

Impact HYD-3: 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 that would: (1) result in substantial erosion or siltation on- or off-site, (2) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off-site, (3) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff, or (4) impede or redirect flood flows (less than significant)

On- or Off-Site Erosion or Siltation
Program activities could require pumping-out or draining of pipelines and facilities. The release of water from pipelines can cause erosion to the bed and banks of a waterbody which can impact flow dynamics within the waterbody, potentially altering the course of the waterbody. PMP water releases would be temporary, and Valley Water routinely releases water to receiving waterbodies as part of ongoing maintenance activities. Valley Water operates in compliance with applicable regulations (i.e., SCVURPPP C.3 Stormwater Manual, pursuant to Order No. R2-2022-0018, NPDES General Permit No. CAS612008), and compliance with the NPDES Construction General Permit for program activities disturbing more than 1 acre (including preparation and implementation of a SWPPP), which would reduce erosion and siltation during program activities.

To further ensure program activities would not alter the course of a water body due to erosion or siltation, several Valley Water BMPs and program-specific AMMs would be implemented as part of the program. In cases where permanent bank stabilization is necessary, BMP WQ-8, requires that bio-engineered solutions be used (e.g., willow wattling, brush matting and installation of rootwads). BMP WQ-10 would require grading a channel to establish a smooth and continuous surface to accommodate flows. AMM HYD-3 would require an erosion control plan to be included in the Excavation Plan prior to any ground-disturbing activities. Additional AMMs discussed under HYD-1 and HYD-2 would also reduce erosion or siltation to water bodies, including AMM HYD-5 to divert flows around actively eroding areas or areas that are subject to erosion. Also, implementation of AMM HYD-6, AMM HYD-9, and AMM HYD-10, along with compliance with required VHP conditions in VHP-covered program areas, would protect exposed soil and vegetated surfaces from erosion during releases. The impact would be **less than significant**.

On- or Off-Site Flooding
As discussed under Impact HYD-1, Valley Water implements standard practices and procedures for water releases, includes slowly ramping up flows so the on-site monitors can preemptively identify and resolve issues with releases, including flooding. For program

activities requiring water releases, Valley Water would further prevent the potential for flooding by implementing AMM HYD-4, which requires consideration of a release reduction protocol (such as performing maintenance in half-full pipes) whenever possible. In addition, AMM HYD-6 requires releases would be contained within temporary spillways that contain flow from the release point to the receiving waterway and water not be allowed to flow directly over erodible soil. AMM HYD-9 and AMM HYD-10 would require monitoring during releases to reduce the potential for high flows. Furthermore, AMM HYD-11 would prevent releases to natural water bodies that are approaching flood stage. Implementation of Valley Water's standard water release procedures and program-specific AMMs would ensure the program's potential to result in on- or off-site flooding would be **less than significant**.

Exceedance of Storm Drain Capacity

Prior to commencing a program task that involves releases into a storm drain, AMM HYD-2 would be implemented, which requires Valley Water to obtain storm drain capacity information and maintain releases below the conveyance capacity. Implementation of this AMM as part of the program would avoid the potential for runoff water to exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The impact would be **less than significant**.

Hydrologic Impacts to Flood Flows

The program would not add impervious surface area to sub-watersheds or otherwise create permanent conditions that would increase peak stormwater runoff rates in receiving waters on an ongoing basis. However, draining program pipelines would cause temporary increases in the rate and volume of runoff in receiving waters in the program area. Although most release points drain to natural (i.e., swales and channels) or constructed (i.e., roadside ditches and storm drains) features that already function to convey stormwater runoff and the overall release volume would be low, the additional flows could temporarily compound existing flooding problems, particularly if pipelines were drained during large precipitation events. Most urban releases are released to relatively large channels or storm drain systems and are not expected to cause flooding or exceed the capacity of in-stream conveyance facilities. As discussed earlier under HYD-1, *Water Quality Impacts from Erosion and Sedimentation*, Valley Water manually controls flow rates up to 20 cfs and it is typical for release rates to be regulated by LSAAs between 3 to 11 cfs. Table 3-2.1 describes moderate flood levels at Valley Water gauge stations. Releases of up to 20 cfs would not be expected to cause flooding or exceed the capacity of a receiving waterbody. Furthermore, AMM HYD-2 would require Valley Water to obtain storm drain capacity prior to release, and AMM HYD-11 would ensure that program activities would not release water to natural water bodies that are approaching flood stage. Implementation of these AMMs as part of the program and compliance with required VHP conditions in VHP-covered program areas would ensure the program's potential to result in hydrologic impacts to flood flows would be **less than significant**.

Significance Determination

Less than Significant

Mitigation
No mitigation would be required for Impact HYD-3.

Impact HYD-4: Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones (less than significant)

Evaluations conducted by the U.S. Geological Survey (USGS) suggest that an earthquake-induced seiche within the San Francisco Bay is unlikely (USGS 1975). Maps provided by the California Geological Survey (CGS) show the potential tsunami inundation zone extending from San Francisco Bay across the historic salt ponds and up the mouths of creeks and rivers, which may receive water as a result of program activities (CGS, n.d.). However, program activities would be limited to existing infrastructure locations that would not be susceptible to tsunami inundation. Therefore, the analysis below is limited to the risk of pollutant release due to flood is evaluated.

As shown in Figure 3.1-2, there are program pipelines located within flood zones. The program would maintain existing infrastructure; therefore, the program would not add new facilities that would have potential to release pollutants in the event of inundation by a flood. Furthermore, program facilities consist primarily of buried potable, raw, and recycled water pipelines and ancillary facilities, which would not release pollutants in the event of inundation.

Certain program tasks, such as internal and external inspections, would have no potential to release pollutants as a result of inundation by flood. Other program tasks, such as excavation, backfill, construction, and other ground disturbance, and repair of pipeline system infrastructure, would involve use of common pollutants (e.g., paints and other types of coatings, fuels, hydraulic fluids, and coolants) that could pose a risk of release of these pollutants if a program site were inundated by a flood while program tasks were ongoing. As described in Section 3.4, Hazards and Hazardous Materials, program activities would be required to follow all applicable federal, State, and local regulations pertaining to the storage of hazardous material release during normal activities or in the event of an accident. As part of the program, BMPs would be implemented such as BMP HM-9 to ensure hazardous materials are properly handled for water quality protection. Spill prevention would be addressed by BMP HM-10, including the accidental release of chemicals. Implementation of BMP WQ-11 would require the worksite be maintained and prohibit sweeping or flushing of surplus materials into storm drains or waterways. AMMs would also be implemented that would reduce potential for release of pollutants in the event of inundation. AMM HAZ-1 would require that hazardous wastes (such as oil, petroleum products, creosote-treated wood etc.) be removed immediately from areas where they may enter a water body. Compliance with AMM HAZ-2, AMM HAZ-3, and VHP conditions (in VHP-covered program areas) would ensure secondary containment for chemicals and proper equipment and fluid storage. These measures would ensure the program's potential to release pollutants due to flood inundation would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HYD-4.

Impact HYD-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (less than significant)

As discussed above, the program falls within the jurisdiction of the San Francisco Bay RWQCB and Central Coast RWQCB and would be subject to their respective basin plans, as well as the Santa Clara Valley Groundwater Management Plan (Central Coast RWQCB 2019; San Francisco Bay RWQCB 2023; Valley Water 2021). The program would continue existing uses, with a similar footprint to existing conditions and would not result in significant impacts related to water quality or groundwater, as discussed under Impact HYD-1. Valley Water is legally required to meet NPDES standards and comply with goals and objectives outlined in the Basin Plans.

Furthermore, program BMPs and program-specific AMMs implemented as part of the program would limit impacts to water quality and beneficial uses listed in the relevant basin plans, as described in the discussions of surface water and groundwater quality under Impact HYD-1 and Impact HYD-2. In addition to BMPs and AMMs discussed above for water quality, groundwater management, and stormwater, AMM HYD-8 and AMM HYD-9 specifically address compliance with the basin plans by requiring water quality monitoring prior to and during releases, and monitoring receiving waters for erosion.

Activities covered under the program would not increase impervious cover or reduce flows to streams used to recharge aquifers. In some cases, program activities may increase water available for recharge. Furthermore, program activities would not significantly affect groundwater movement within the underlying aquifer. Therefore, the program would be consistent with applicable Water Quality Control and Groundwater Management Plans as it would not affect existing water management programs, sustainability efforts, monitoring programs, or partnerships between water retailers and land use agencies as outlined in the Plans. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HYD-5.

3.2 Geology and Soils

This section provides an overview of the geology, soils, and paleontological resources in the program area; applicable regulations, policies, and standards; and a discussion of the program's potential impacts on geology, soil, seismicity, and paleontological resources.

3.2.1 Environmental Setting

The environmental setting includes the program area, which encompasses Santa Clara County as well as limited sections of eastern Merced County and San Benito County, in which a 2.5-mile segment of the Pacheco Conduit and 2-mile segment of the Santa Clara Conduit pipeline are located, respectively.

Topography

Santa Clara County is at the southern end of the San Francisco Bay and encompasses 1,312 square miles. The county is approximately 35 miles wide and more than 40 miles long. Santa Clara Valley runs northwest-southeast, traversing the entire length of Santa Clara County and drains into the San Francisco Bay to the north and Monterey Bay to the south. The valley is lined on the east by the Diablo Mountain Range and on the west by the Santa Cruz Mountains. The Diablo Mountain Range elevation ranges from approximately 2000 to 4000 feet above mean sea level. The highest point of the Santa Cruz Mountains is Loma Prieta, at 2791 feet above mean sea level (Santa Clara County 1994b).

The portion of the program area in northern San Benito County in the northern part of Hollister Valley borders southern Santa Clara County and is relatively flat. Western Merced County, where the easternmost portion of the program area is located, borders southeastern Santa Clara County. This portion of the county contains Pacheco State Park, which encompasses a portion of the Diablo Mountain Range. The highest point in Pacheco State Park is Spikes Peak, which is approximately 2000 feet above mean sea level (California State Parks 2015).

Geology

Santa Clara County lies in the central Coast Range of California and is composed of folded and faulted sedimentary and volcanic rocks as well as more recent, alluvial and Bay deposits in the lower valley areas. The Diablo Mountain Range along the eastern edge of the county includes primarily sandstone, shale, chert, and serpentine of the Franciscan Assemblage of Jurassic to Cretaceous age (208 to 66 million years ago). The Santa Cruz Mountains on the western edge of the county are composed primarily of Francisco Assemblage sandstone, shale, chert, and serpentine, with lesser amounts of Santa Clara, Purisima, San Lorenzo, Monterey, and Vaqueros formations of Tertiary age (66 million to 2.6 million years ago) also occurring. The Francisco Assemblage was deposited in a deep marine trench off the California Coast, which was folded, faulted, and accreted into the continental margin, forming the Coast Ranges as the Pacific and North American tectonic plates converged. During the Tertiary age, the Calaveras and Hayward faults divided the county

into eastern and western blocks. The western block tilted, and its low-lying eastern portion formed the Santa Clara Valley, which has accumulated alluvial deposits (Santa Clara County 1994b).

The valley area has three interconnecting basins: Santa Clara Valley, Coyote Valley, and Llagas Basin. The valley areas extend through the center of the county, southeasterly from the San Francisco Bay (in the north) to the Hollister Basin in San Benito County (in the south) and a portion of western Merced County in the southeast (Santa Clara County 1994a). The Santa Clara Valley is underlain by Quaternary-age (less than 2 million years old) alluvial deposits, which are up to several hundred feet deep (Santa Clara County 1994b). Figure 3.2-1 shows the geologic units that underlay the program area.

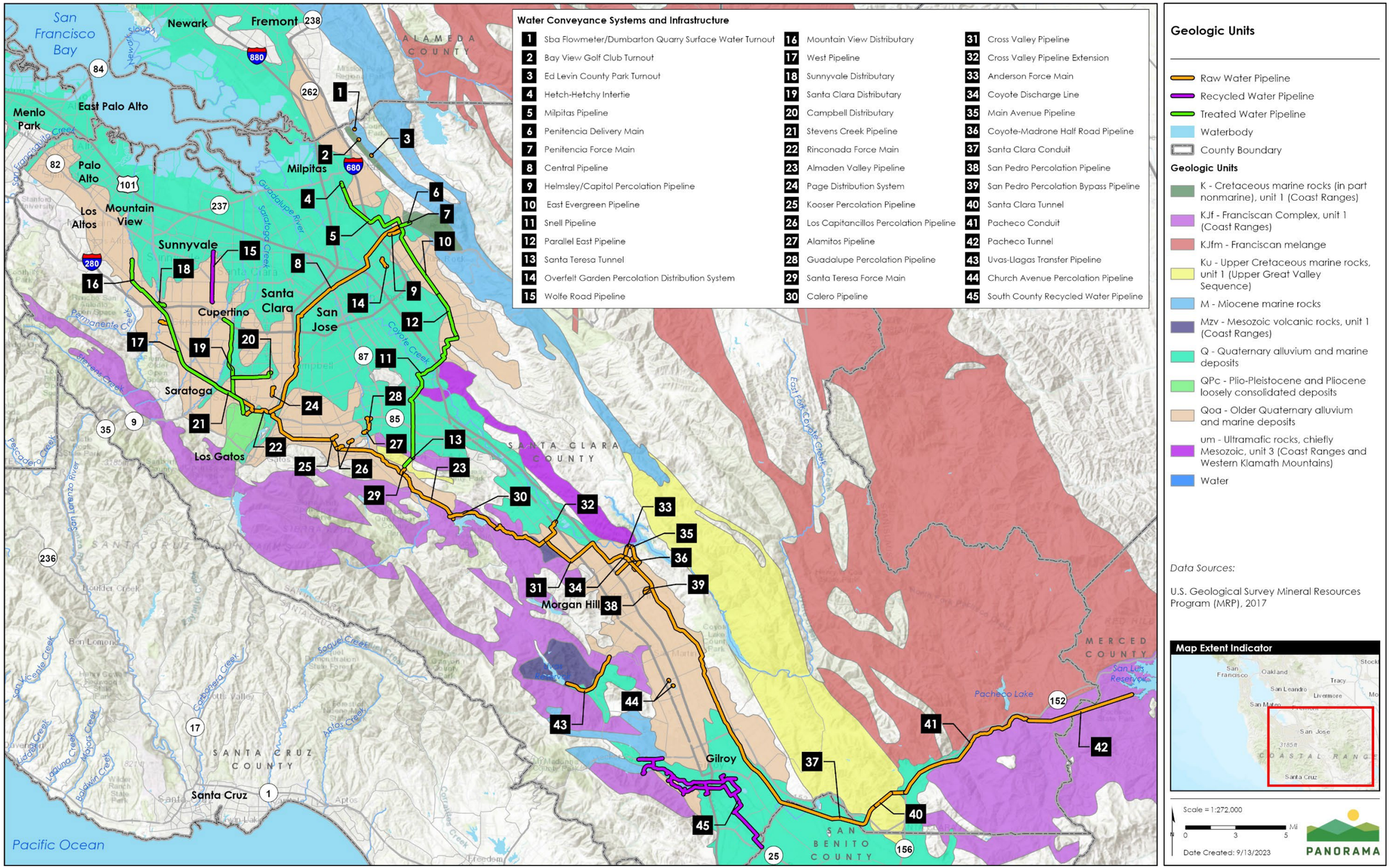
Soils

The foothills of the Santa Clara Valley are underlain principally by older dissected and deformed alluvial fan deposits of the Quaternary period and have well developed soil profiles (Helley and Brabb 1971). These deposits consist of weakly to moderately consolidated gravels and sand, with interbedded silt and clay that reflect the characteristics of the bedrock and surficial materials of the surrounding uplands. The alluvial fans have grown during multiple episodes of sediment deposition and have thicknesses of several hundred feet. The Santa Clara Valley is underlain by thick unconsolidated alluvium—gravel, sand, clay, and silt—that were deposited in the Holocene age (less than 11,700 years before present (University of California Museum of Paleontology 2011)). The texture of these deposits ranges from cobble to clay, mixed or interbedded laterally and vertically in places. These poorly consolidated deposits often are saturated and have little or no stability where geologically deformed or artificially altered. The valley margins are composed of solitary or coalesced alluvial fans.

The bay plains and alluvial valleys primarily are regions of sediment deposition, although localized areas of erosion occur along unprotected banks of laterally eroding streams. Sediment transported by streams from the adjacent mountains forms alluvial fans, and sand and gravel bars on stream floodplains and in artificial channels. Prime agricultural soils primarily are in valley areas in the southern section of Santa Clara County and the northern section of San Benito County.

Serpentine soils are present at various locations throughout the program area. Serpentine soils are produced through hydrothermal alteration of ultramafic igneous rocks and occur in zones of faulting and mountain uplift. Serpentine soils support a number of endemic or nearly endemic plant species. The specificity of vegetation on serpentine soil is mainly from serpentine's unique chemistry, which is low in calcium and nutrients (i.e., nitrogen, phosphorus, potassium) and high in iron and magnesium. The low availability of calcium, exacerbated by high magnesium concentrations, is considered to limit plant growth. Although most plant species have evolved to grow in soils with high calcium to magnesium ratios, relatively few plants may have adapted mechanisms to tolerate the deleterious effects of ions (e.g., magnesium, sodium, hydrogen) at low calcium levels because higher concentrations usually prevent these ions from damaging plants (Brooks 1987).

Figure 3.2-1 Geologic Units in the Program Area



Source: USGS Mineral Resources Program 2017

Geologic Hazards

Faults, Seismicity, and Ground-Shaking

Three major active faults cross Santa Clara County: the San Andreas, Calaveras, and Hayward faults. Various other active secondary faults and smaller active faults are also in Santa Clara County. The Ortigalita Fault (north and south), which is a smaller fault, traverses western Merced County just east of the Pacheco Conduit, and the Calaveras Fault traverses north-south through northern San Benito County, intersecting with the Santa Clara Conduit just south of San Felipe Lake. Each one of these faults has generated significant earthquakes throughout recorded history (U.S. Geological Survey (USGS) 2022). The Alquist-Priolo Faults Zones within 1 mile of a program pipeline include the Calaveras, Crosley, Evergreen, Hayward, and Hayward Southeast extension (California Department of Conservation (CDOC), n.d.). Santa Clara County also has identified fault rupture hazard zones in the county, several of which either cross or are in proximity of program pipelines. Both the Alquist-Priolo fault zones and fault rupture hazard zones in the program area are shown in Figure 3.2-2.

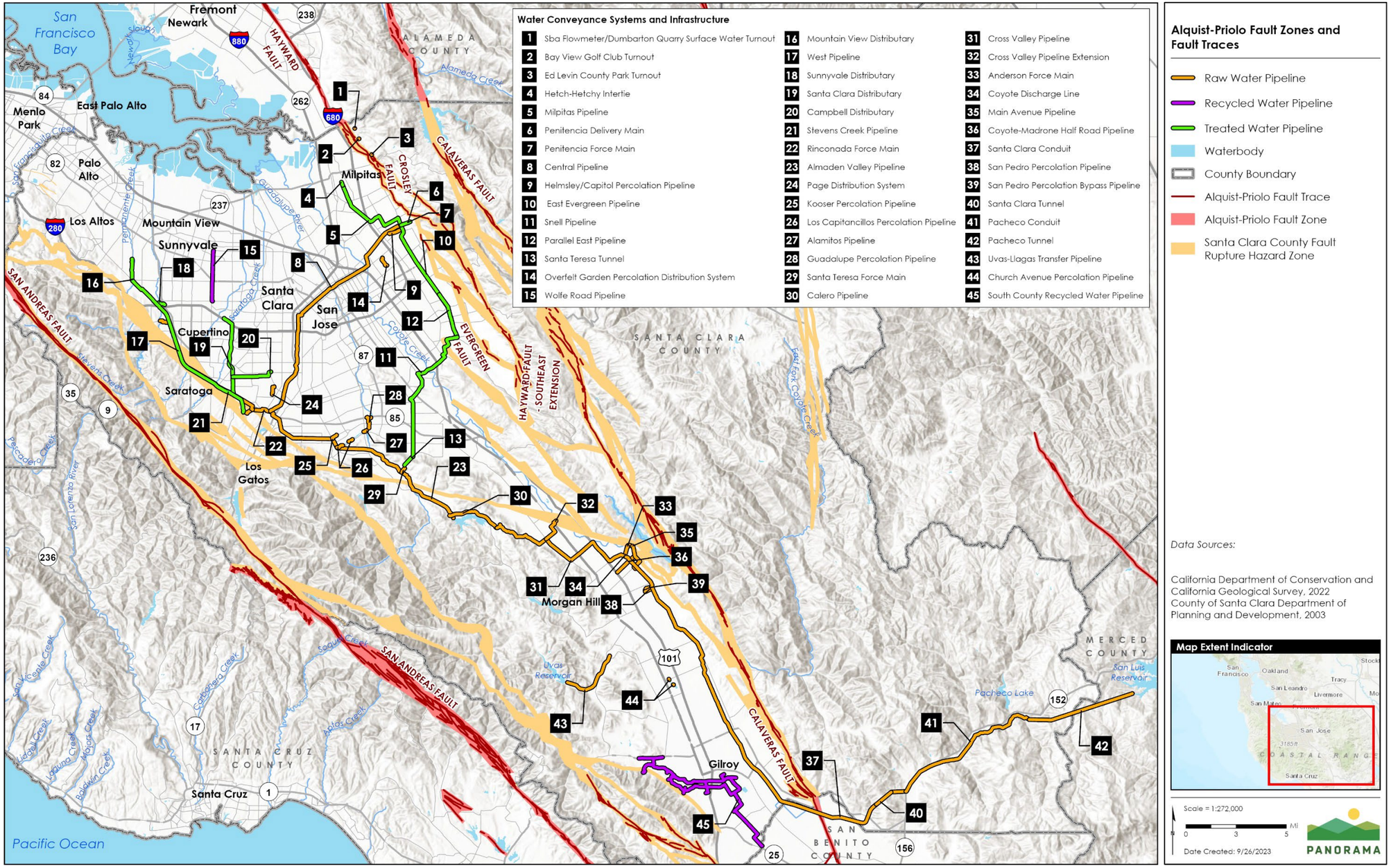
Throughout the San Francisco Bay Area, the potential exists for movement, ground-shaking, and seismically induced ground failures along any one of the several active faults. Faults in the region have been the source of several large historical earthquakes that have subjected the program area to strong shaking and are considered sources of future large earthquakes. Along the San Andreas Fault, a magnitude 8+ earthquake is possible, with associated horizontal displacement of a few tens of feet. An earthquake of magnitude 7+ is possible along the Calaveras Fault, with lateral displacements of several feet (Santa Clara County 1994a).

Liquefaction and Lateral Spreading

In areas with loose, saturated sands and silts with low clay content, seismic ground-shaking can elevate pore pressures within the groundwater and result in loss of strength by the sand and silt, causing liquefaction. Liquefaction can cause the earth to move laterally, lose its supporting strength, to settle differently, or to collapse (Santa Clara County 1994a). Areas subject to liquefaction in the program area generally encompass lower lying areas near the San Francisco Bay and Santa Clara Valley floor, as shown in Figure 3.2-3. These areas have alluvial deposits that have a higher groundwater table.

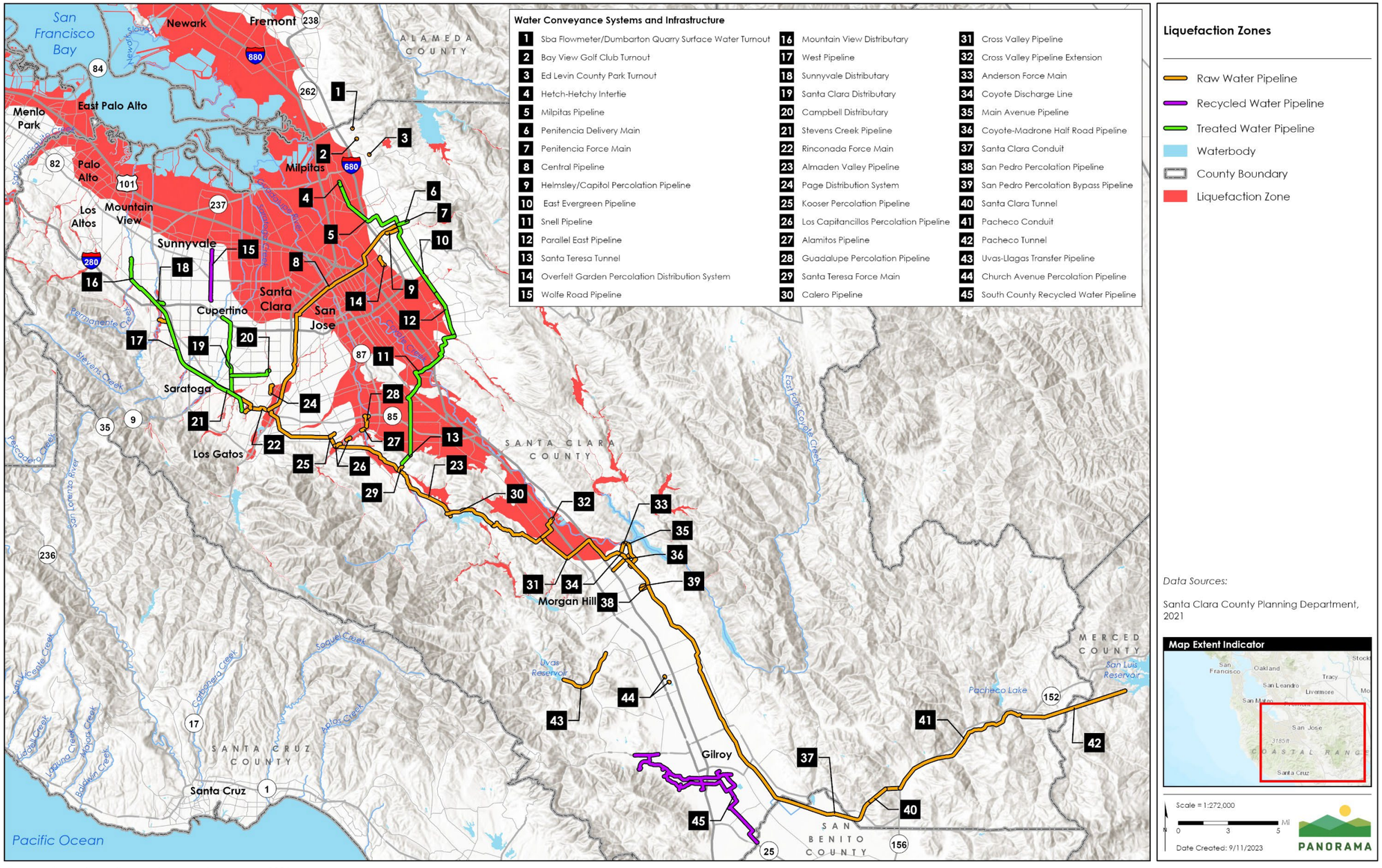
Lateral spreading is a type of landslide that commonly occurs on gentle slopes and have a rapid, fluid-like flow movement resulting from liquefaction that spreads downslope toward an open channel or other excavation boundary (USGS, n.d.). Lateral spreading can occur from ground-shaking in areas subject to liquefaction, causing damage to structures.

Figure 3.2-2 Alquist-Priolo Fault Zones and Fault Traces in the Program Area



Source: County of Santa Clara and Department of Planning and Development 2003; California Department of Conservation and California Geological Survey 2022a; 2022b

Figure 3.2-3 Liquefaction Potential in the Program Area



Source: Santa Clara County Planning Department 2021a

Landslides

Slope stability depends on several complex variables, including geology, soil structure, and the amount of groundwater present, as well as external processes, such as climate, topography, slope geometry, and human activity. A landslide is a movement of surface material down a slope (USGS 2023). Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered either by static or dynamic forces. Landslide susceptibility in the program area is shown in Figure 3.2-4.

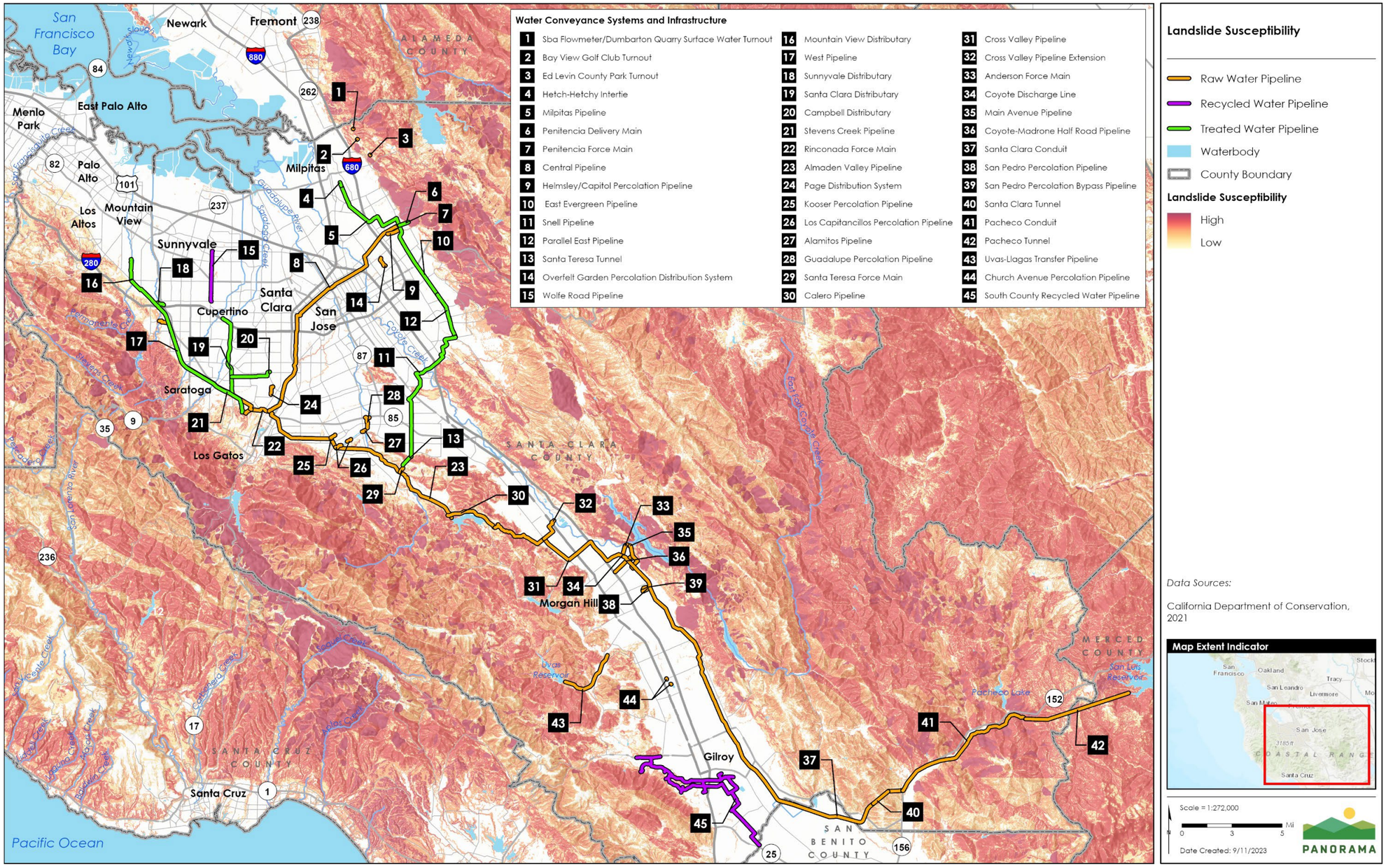
Expansive Soil

Expansive soil exhibits swelling and shrinking behavior related to cyclic wetting and drying of the soil. The expansive nature is driven by the fraction of clay content and minerology of the clay. Soils with higher plasticity generally are correlated with a greater swell potential. Structures founded directly on expansive soils at relatively shallow depths may be damaged incrementally over a long period, usually because of inadequate drainage or foundation engineering, allowing the soil to experience wetting and drying cycles from infiltration and evapotranspiration, measured by linear extensibility. Linear extensibility is a metric used to determine whether soils are expansive and refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state (USDA 2017). The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent, moderate if 3 to 6 percent, high if 6 to 9 percent, and very high if more than 9 percent (USDA 2017). If the linear extensibility is more than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures as well as to plant roots. Linear extensibility of soils in the program area is shown in Figure 3.2-5.

Subsidence

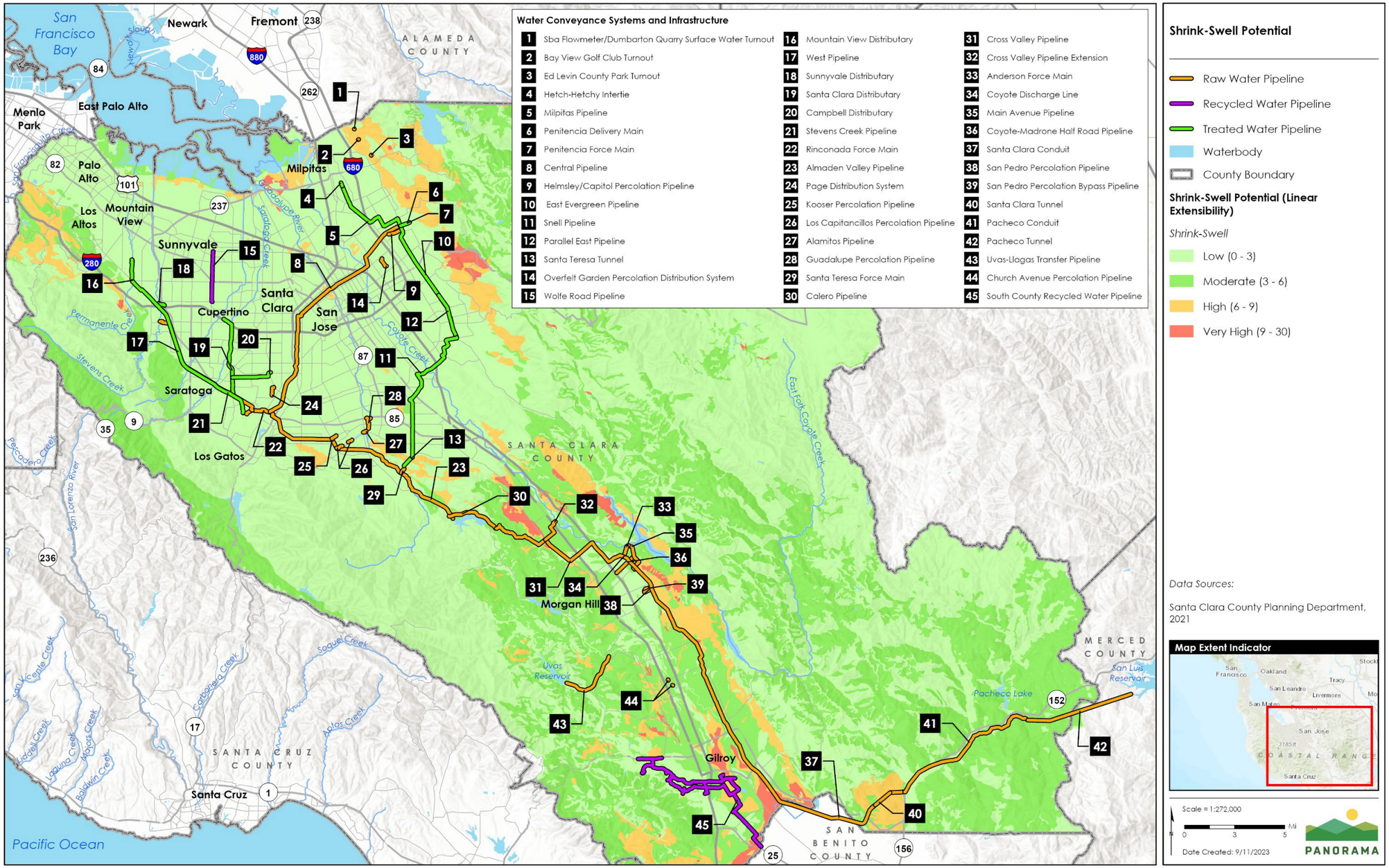
Subsidence is the gradual lowering of the land surface, caused by compaction of underlying materials. Subsidence can occur because of the extraction of groundwater and oil, which can cause subsurface clay layers to compress and lower the overlying land surface. Subsidence also can occur when groundwater is over-extracted, because the presence of water in the pore spaces between grains helps to support the skeletal structure of the geologic unit, and removal of the water allows compaction (USDA NRCS and Esri 2022b). As shown in Figure 3.2-6, the program area covers areas subject to high (over 100 centimeters) potential for soil subsidence, primarily in the more highly developed portions of northern Santa Clara Valley.

Figure 3.2-4 Landslide Hazards in the Program Area



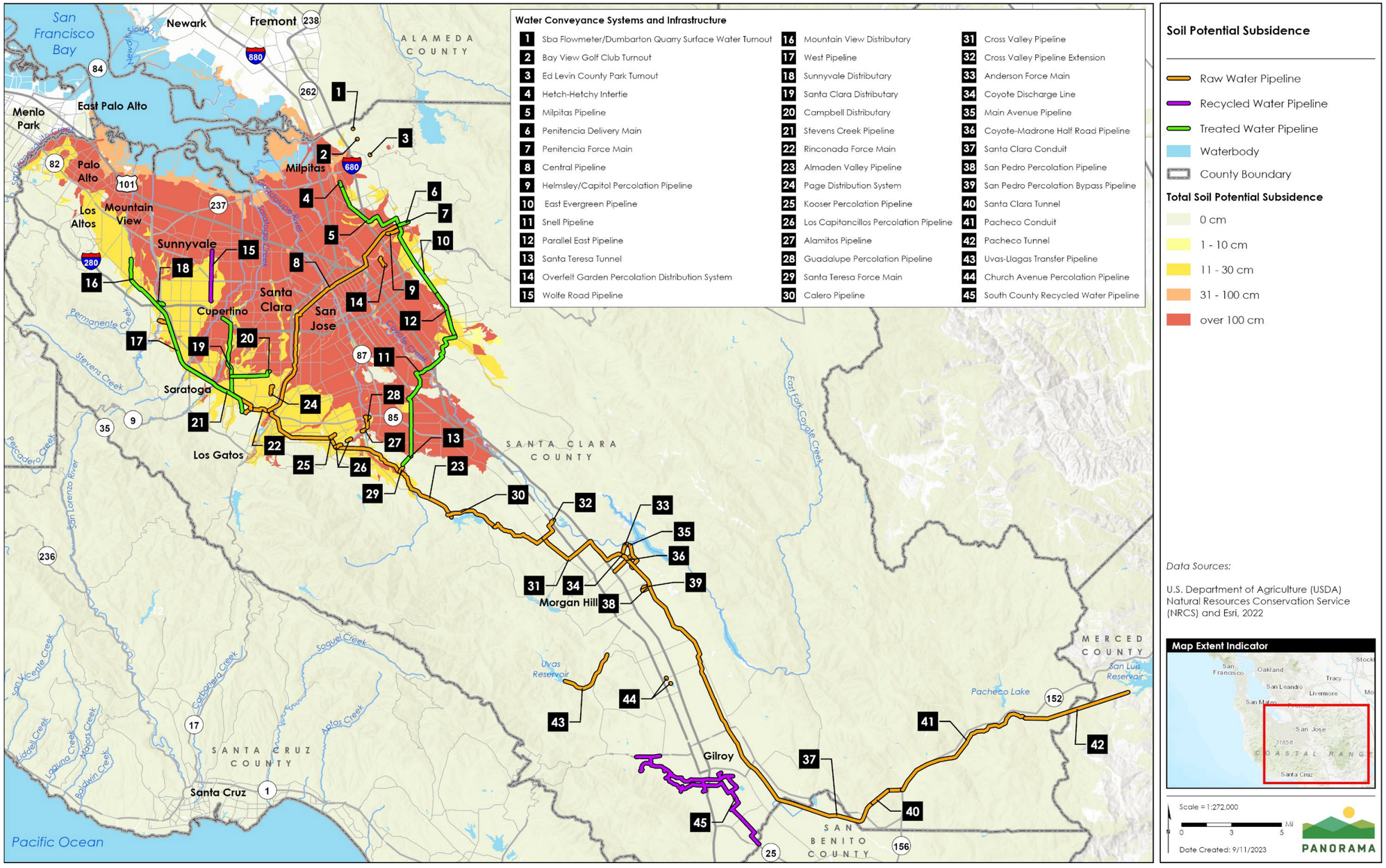
Source: California Department of Conservation 2021

Figure 3.2-5 Expansive Soils in the Program Area



Source: Santa Clara County Planning Department 2021b

Figure 3.2-6 Potential for Subsidence in the Program Area



Sources: USDA NRCS and Esri 2022

Paleontological Resources

Paleontological resources include the fossilized remains—body fossils, casts, and impressions—of plants and animals, including vertebrates (i.e., animals with backbones, such as mammals and fish), invertebrates (i.e., animals without backbones, such as mollusks, starfish, clams, and corals), and various kinds of microscopic organisms. They also include trace fossils, such as tracks preserved in sedimentary rocks, trackways (concentrations of multiple animal tracks), traces left by crawling animals, and burrows. Only materials older than about 5,000 radiocarbon years generally are considered to qualify as paleontological resources (SVP 2010).

Many fossils are buried below the ground surface and are discovered only when excavation or other ground disturbance begins. Therefore, accepted protocols rely on the concept of *paleontological potential* or *paleontological sensitivity*, which is based on the concept that geologic units that historically have been known to produce fossil finds have a higher likelihood of yielding fossil finds in other locations. Because the key concern with regard to damage or destruction of fossil resources is the loss of scientific information, paleontological potential/sensitivity evaluations typically also factor in the types of fossil materials that a geologic unit has produced and their scientific importance. For instance, vertebrate fossils are considered scientifically important because of their comparative rarity and their informational potential. Fossils that provide information on the age of the strata in which they occur also have informational value and are considered scientifically important (SVP 2010). Geologic units that have produced scientifically important fossil finds anywhere within their geographic extent are considered paleontologically sensitive wherever they occur (SVP 2010).

Therefore, to establish the updated PMP's paleontological setting, geologic units in the program area were identified and their documented fossil content was assessed to determine their paleontological potential (i.e., the likelihood that program activities would result in disturbance or loss of paleontological resources). Geologic mapping by the U.S. Geological Survey (USGS) and California Geological Survey (CGS) was compiled, and program pipeline alignments were overlaid to identify potentially affected geologic units. Information on documented fossil content by geologic unit then was derived from the published geologic and paleontological literature in combination with searches of the University of California Museum of Paleontology (UCMP) online database of fossil localities and specimens. Evaluation of paleontological potential (sensitivity) followed current guidance of the Society of Vertebrate Paleontology (SVP) (SVP Impact Mitigation Guidelines Revision Committee 2010) and is shown in Table 3.2-1. Appendix F of this EIR provides additional detail on the documented fossil content of the potentially affected geologic units that are listed in Table 3.2-2, including evaluation of their paleontological potential (sensitivity) using the SVP criteria shown in Table 3.2-1.

Table 3.2-1 SVP Paleontological Potential Categories

Sensitivity Category	Description/Criteria
High potential	• Geologic units from which significant fossils have been recovered (vertebrate remains and/or scientifically important invertebrate, plant, or trace fossils) • Typically includes – sedimentary rock units suitable for the preservation of fossils – some volcaniclastic formations (e.g., ashes and tephras; tephras are unconsolidated pyroclastic material produced by a volcanic eruption) – some low-grade metamorphic rocks • May include other rock types
Low potential	• Geologic units that have a sparse history of producing significant fossil finds, based on the published paleontological literature • Geologic units with little potential to produce significant fossil finds, based on field evaluation by a qualified professional paleontologist • Includes units such as basalt flows that only preserve fossils in rare circumstances
No potential	• Geologic units that have no potential to produce significant paleontological finds, based on their nature or origin • Includes high-grade metamorphic rocks, because any fossil content in the protolith would be destroyed by high temperature and/or pressure associated with metamorphism • Also includes plutonic igneous rocks that form via crystallization of magma at substantial depth
Undetermined potential	• Geologic units that do not fall into the "no potential" category and for which little information on fossil content is available

Source: SVP 2010

Table 3.2-2 lists the surface-exposed geologic units underlying the program pipeline alignments.

Table 3.2-2 Potentially Affected Geologic Units and Paleontological Potential in the Program Area

Quadrangle	Age	Map Symbol	Unit Name/Lithologic Description	Paleontological Potential[a]
Palo Alto 30' x 60' Quadrangle	Holocene	Qhsc	Stream channel deposits	Low potential[c]
Palo Alto 30' x 60' Quadrangle	Holocene	Qhaf	Alluvial fan and fluvial deposits	Low potential[c]
Palo Alto 30' x 60' Quadrangle	Holocene	Qpaf	Alluvial fan and fluvial deposits	High potential

Quadrangle	Age	Map Symbol	Unit Name/Lithologic Description	Paleontological Potential[a]
Palo Alto 30′ x 60′ Quadrangle	Upper Pliocene–Lower Pleistocene	QTsc	Santa Clara Formation	High potential
San Jose 30′ x 60′ Quadrangle	Quaternary (Pleistocene–Holocene)	Qa	Alluvium, undivided	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Holocene	Qhc	Stream channel deposits	Low potential[d]
San Jose 30′ x 60′ Quadrangle	Holocene	Qhb	Basin deposits	Low potential[d]
San Jose 30′ x 60′ Quadrangle	Holocene	Qhfp	Floodplain deposits	Low potential[d]
San Jose 30′ x 60′ Quadrangle	Holocene	Qhl	Levee deposits	Low potential[d]
San Jose 30′ x 60′ Quadrangle	Holocene	Qhf1	Alluvial fan deposits, younger	Low potential[d]
San Jose 30′ x 60′ Quadrangle	Holocene	Qhf2	Alluvial fan deposits, older	High potential
San Jose 30′ x 60′ Quadrangle	Holocene	Qls	Landslide deposits	Low potential
San Jose 30′ x 60′ Quadrangle	Holocene	Qha	Alluvium	Low potential[d]
San Jose 30′ x 60′ Quadrangle	Holocene[e]	Qhg	No name assigned	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Upper Pleistocene/Late Pleistocene	Qpf	Alluvial fan deposits	High potential
San Jose 30′ x 60′ Quadrangle	Middle–Late Pleistocene	Qof	Older alluvial fan deposits	High potential
San Jose 30′ x 60′ Quadrangle	Middle–Late Miocene	Tcc	Claremont Formation	High potential
San Jose 30′ x 60′ Quadrangle	Cretaceous	Kbs	Berryessa Formation, upper informal member	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Late Pliocene–Early Pleistocene	QTsc	Santa Clara Formation	High potential
San Jose 30′ x 60′ Quadrangle	Early Cretaceous	fpv	Basaltic rocks	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Early Cretaceous	fms	Franciscan complex graywacke, Marin Headlands Terrane	Undetermined potential

Quadrangle	Age	Map Symbol	Unit Name/Lithologic Description	Paleontological Potential[a]
San Jose 30′ x 60′ Quadrangle	Jurassic	Jsp	Serpentinized harzburgite and dunite	No potential
San Jose 30′ x 60′ Quadrangle	Early Jurassic–Early Cretaceous	fmc	Franciscan complex radiolarian chert, Marin Headlands Terrane	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Late Cretaceous–Early Tertiary[e]	fm	Franciscan complex melange	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Jurassic–Cretaceous[e]	fy3	Franciscan complex upper cleaved metagraywacke unit, Yolla Bolly Terrane (Cretaceous[e] and Jurassic)	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Eocene	Tls Tcm	Sandstone and shale of Loma Chiquita Ridge Tls–sandstone and shale Tcm–mudstone and sandstone of Mt. Chuai	High potential
San Jose 30′ x 60′ Quadrangle	Late Miocene	Tsl	Basalt of San Luis Reservoir	Undetermined potential
San Jose 30′ x 60′ Quadrangle	Middle to Late Miocene	Tlt	Siltstone and sandstone (unnamed)	High potential
Monterey 30′ x 60′ Quadrangle	Holocene	Q	Alluvium	Low potential[e]
Monterey 30′ x 60′ Quadrangle	Holocene	Qb	Basin deposits	Low potential[e]
Monterey 30′ x 60′ Quadrangle	Pleistocene	Qo	Older alluvium	High potential
Monterey 30′ x 60′ Quadrangle	Late Cretaceous	Ku	Great Valley Sequence sedimentary rocks	High potential

Notes:

[a] a. Because the program area spans three separate USGS quadrangles, each with different geology and geologic nomenclature, the list of geologic units is organized by quadrangle.

[b] b. In 2005, remains of a Rancholabrean (early Pleistocene) Columbian mammoth (Mammuthus columbi) were discovered along Valley Water's Guadalupe River right-of-way (ROW) in San Jose (University of California Museum of Paleontology 2005, Andersen et al. 2008), within strata identified as Holocene by published geologic maps (e.g., Wentworth et al. 1999). The find included a partial skull, femur, partial pelvis, ribs, toe bones, and portions of two tusks (University of California Museum of Paleontology 2005; Maguire and Holroyd 2016).

Although the mammoth find was in part surface-exposed, the bones were embedded in situ within apparently coherent sedimentary strata. Because the remains are almost certainly not of Holocene age, either the sediments in which they were found are actually of Rancholabrean rather than Holocene age, or the bones were reworked from older deposits during Holocene time. In either case, the find indicates that Holocene-mapped units in the Santa Clara Valley—and possibly also in adjacent areas—may have the potential to contain significant fossil materials, including vertebrate remains. This also raises the possibility that some strata mapped as Holocene in this area actually may be of Pleistocene age, and therefore may be more sensitive than current geologic mapping implies. Thus, an extra degree of caution likely is warranted when dealing with Holocene-mapped materials in the Santa Clara Valley area, and particularly in the northern portion of the valley, in proximity to the site of the 2005 mammoth find. This degree of caution probably should be extended to adjacent areas until further work clarifies the degree of risk involved.

[c] c. Refer to the discussion for Holocene units of Palo Alto 30 by 60-foot quadrangle above; the same reasoning, and the same caveats, apply to the Holocene units of the San Jose 30 by 60-foot quadrangle, particularly in the northern portion of the quadrangle in the vicinity of the 2005 mammoth find.

[d] d. Refer to the discussion for Holocene units of Palo Alto 30 by 60-foot quadrangle above; the same reasoning, and the same caveats, apply to the Holocene units of the Monterey 30 by 60-foot quadrangle.

[e] e. Denotes uncertainty of age.

Sources: Brabb et al. 2000 (Palo Alto quadrangle); Wagner et al. 2002 (Monterey quadrangle)

3.2.2 Regulatory Setting

Federal Regulations, Policies and Standards

American Antiquities Act (54 USC Sections 320301–320302, 18 USC Section 1866)
The American Antiquities Act was enacted in 1906 with the primary goal of protecting cultural resources in the U.S. Accordingly, it prohibits appropriation, excavation, injury, or destruction of "any historic or prehistoric ruin or monument, or any object of antiquity" located on lands owned or controlled by the federal government. The act also establishes penalties for such actions and sets forth a permit requirement for collection of antiquities on federally owned lands.

Neither the American Antiquities Act itself nor its implementing regulations (43 Code of Federal Regulations [CFR] Part 3) specifically mentions paleontological resources. However, many federal agencies have interpreted objects of antiquity to include fossils. Consequently, the act represents an early cornerstone of efforts to protect the nation's paleontological resources. For the program, this act would apply only to the Santa Clara Conduit and the Pacheco Conduit, which are on federal easements that are owned by the U.S. Bureau of Reclamation.

Paleontological Resources Preservation Act (16 USC Section 470aaa)
Enacted as part of the Omnibus Public Land Management Act in 2009, the Paleontological Resources Preservation Act requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise. The act includes specific provisions addressing management of these resources by the U.S. Bureau of Land Management, National Park Service, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and U.S. Forest Service. The act affirms the authority for many of the policies that the federal land managing agencies already have in place for management of

paleontological resources, such as issuing permits for collecting paleontological resources, curation of paleontological resources, and confidentiality of locality data. For the program, this act would apply only to the Santa Clara Conduit and the Pacheco Conduit, which are on federal easements that are owned by the U.S. Bureau of Reclamation.

State Regulations, Policies, and Standards

The Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) was enacted in 1972 to mitigate the hazard of surface fault rupture to structures for human occupancy. In accordance with the Alquist-Priolo Act, the State Geologist established regulatory zones, called "Earthquake Fault Zones," around the surface traces of active faults and published maps showing the earthquake fault zones. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace, because many active faults are complex and consist of more than one branch that may experience ground surface rupture. Title 14, Section 3601 of the California Code of Regulations (CCR) defines buildings intended for human occupancy as those that are inhabited for more than 2,000 hours per year.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was enacted in 1990, following the Loma Prieta earthquake, to reduce threats to public health and safety and minimize property damage caused by earthquakes. The SHMA requires the State Geologist to delineate various seismic hazard zones, and for cities, counties, and other local permitting agencies to regulate certain development projects within these hazard zones, called Zones of Required Investigation. For projects that would locate structures for human occupancy within designated Zones of Required Investigation, the act requires project applicants to perform a site-specific geotechnical investigation to identify potential site-specific seismic hazards and corrective measures before receiving building permits. The CGS Guidelines for Evaluating and Mitigating Seismic Hazards (Special Publication 117A) provides guidance for evaluating and mitigating seismic hazards (CGS 2008). The CGS developed official maps based on USGS topographic quadrangles, as required by the SHMA. The program area is within the Chittenden, Three Sisters, San Felipe, Milpitas, Calaveras Reservoir, Cupertino, San Jose West, San Jose East, Los Gatos, Santa Teresa Hills, Morgan Hill, Mount Sizer, Mount Madonna, Gilroy, Pacheco Peak, and Pacheco Pass quadrangles (CDOC, n.d.; USGS 2010).

California Occupational Safety and Health Administration Regulations

Occupational safety standards are included in federal and State laws to minimize worker safety risks from both physical and chemical hazards in the workplace. In California, the California Division of Occupational Safety and Health (Cal/OSHA) and the federal Occupational Safety and Health Administration (OSHA) are the agencies responsible for ensuring worker safety in the workplace.

The OSHA excavation and trenching standard (29 CFR 1926.650) covers requirements for excavation and trenching operations, which are among the most hazardous construction activities. OSHA requires that all excavations in which employees potentially may be exposed

to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the sides of the excavation and the work area. Cal/OSHA is the implementing agency for both State and federal OSHA standards. All contractors are required to comply with OSHA regulations.

California Building Code and International Building Code

The State of California mandates minimum standards for building design through the California Building Code (CBC) (CCR Title 24). The 2022 CBC was published in July 2022, with an effective date of January 1, 2023 (California Building Standards Commission, n.d.). The most current and updated version of the CBC generally is adopted by local jurisdictions to guide building construction. The CBC specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California. The CBC requires that all structures and permanently attached nonstructural components be designed and built to resist the effects of earthquakes. The CBC also addresses grading and other geotechnical issues, building specifications, and non-building structures.

The International Building Code (IBC), known as the Uniform Building Code prior to 2000, was developed by the International Conference of Building Officials and is used by most states, including California, as well as local jurisdictions to set basic standards for the acceptable design of structures and facilities. The IBC provides information on criteria for seismic design, construction, and load-bearing capacity associated with various buildings and other structures and features. In addition, the IBC identifies design and construction requirements for addressing and mitigating geologic hazards. New construction generally must meet the requirements of the most recent version of the IBC. The IBC was incorporated as part of the CBC, which has been modified for California based on the natural environment of the state that requires more detailed and/or more stringent regulations.

With certain modifications, Santa Clara County has adopted the 2022 CBC. The County's modifications and amendments to the 2022 CBC are given in Division C3, Chapter I, Article 2 of the County Ordinance Code. Valley Water's internal standard also is the 2022 CBC, which currently is used for the design of all Valley Water projects.

NPDES Construction General Permit

Construction that disturbs more than 1 acre of land surface is subject to the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002, Construction General Permit as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the U.S. from construction sites that disturb 1 or more acres of land surface. The permit regulates stormwater discharges associated with construction or demolition, such as clearing and excavation; construction of buildings; and construction of linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) to prevent sediment and pollutants from contacting stormwater and from moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area.

For program work sites, the Construction General Permit would be implemented and enforced by the San Francisco Bay Regional Water Quality Control Board (RWQCB), which administers the stormwater permitting program.

California Public Resources Code Section 5097.5
Section 5097.5 of the California Public Resources Code (PRC), which protects paleontological resources, states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in the PRC section, "public lands" means lands owned by, or under the jurisdiction of, the State or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with PRC 5097.5 for the agency's activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

State CEQA Guidelines
Paleontological resources also are afforded some protection by environmental legislation set forth under CEQA (14 CCR Division 6, Chapter 3). Appendix G (Part V) of the State CEQA Guidelines provides guidance related to significant impacts on paleontological resources, stating that a project normally will result in a significant impact on the environment if it will directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. The State CEQA Guidelines do not define "directly or indirectly destroy," but a reasonable interpretation is the physical damage, alteration, disturbance, or destruction of a paleontological resource. The State CEQA Guidelines also do not define the criteria or process to determine whether a paleontological resource is significant or "unique." The SVP has set significance criteria for paleontological resources (1995, 2010). Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most State regulatory agencies

that are responsible for oversight of paleontological laws, ordinances, regulations, and standards accept and use the professional standards set forth by the SVP.

Pacheco State Park General Plan

In 2006, the California State Park and Recreation Commission approved the General Plan for Pacheco State Park, which identifies the long-term vision and goals for the park and provides guidelines for protecting the park's resources. Multi-use trails currently are the primary form of recreation at the park. The goals of the Pacheco State Park General Plan include working with Valley Water to ensure that maintenance of the Pacheco Conduit does not interfere with park operations or significantly affect park resources, including geological and soil resources (California Department of Parks and Recreation 2006).

Local Regulations, Policies, and Standards

Santa Clara County

Santa Clara County General Plan

Adopted in 1994, the Santa Clara County General Plan provides strategies, policies, and implementation to guide the evaluation of the natural and built environment for potential geologic hazards and loss of geologic resources, including paleontological resources. The Health and Safety and Resource Conservation Chapter of the General Plan contains the following geologic hazard policies pertaining to the protection of public safety, as well as the conservation of heritage resources, which include paleontological resources, relevant to the program (Santa Clara County 1994a).

C-HS 33 Development in areas of natural hazards should be designed, located, and otherwise regulated to reduce associated risks, by regulating the type, density, and placement of development where it will not:

a. be directly jeopardized by hazards;
b. increase hazard potential; and
c. increase risks to neighboring properties.

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 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.

C-RC 54 Heritage resources should be restored, enhanced, and commemorated as appropriate to the value and significance of the resource.

Santa Clara County Geologic Ordinance

The Santa Clara County Geologic Ordinance establishes minimum requirements for the geologic evaluation of land based on proposed land uses, as well as procedures to enforce these requirements. The ordinance also establishes rules and regulations for development of land that

is on or adjacent to known potentially hazardous areas, which can result in geologic hazards. The provisions of the ordinance are intended to ensure that the County fulfills its duties under State law regarding geologic hazards, including the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Mapping Act (Santa Clara County 2002). In accordance with Section C12-606 of the ordinance, the Santa Clara County geologic hazard zones and maps are the basis for the County to determine which provisions of the ordinance apply to a project.

General Plans of Incorporated Cities within Santa Clara County

Various local geological resources and hazards are the responsibility of the incorporated cities or towns within Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to geological resources:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The geologic and soil resource and hazard policies in these general plans generally indicate that the local jurisdiction has the responsibility to make geologic hazards known to the public.

San Benito County

San Benito County General Plan

Policies related to geological hazards and resources in the San Benito County General Plan that may apply to the program include the following (San Benito County 2015):

HS-3.2 Subsidence or Liquefaction. The County shall require that all proposed structures, utilities, or public facilities within recognized near-surface subsidence or liquefaction areas be located and constructed in a manner that minimizes or eliminates potential damage.

HS-3.7 Setback from Fault Traces. The County shall require setback distances from fault traces to be determined by individual site specific surface rupture investigations.

PFS-6.8 Reduce Erosion and Sedimentation. The County shall ensure that drainage systems are designed and maintained to minimize soil erosion and sedimentation and maintain natural watershed functions.

NCR-7.11 Prohibit Unauthorized Grading. The County shall prohibit unauthorized grading, collection, or degradation of Native American, tribal, archaeological, or paleontological resources, or unique geological formations.

Merced County

Merced County General Plan

The Health and Safety Element of the Merced County General Plan includes several policies related to geologic and seismic hazards that may apply to the program (Merced County 2013). These policies include the following:

HS-1.8 **Grading Standards.** Require that the provisions of the International Building Code be used to regulate projects subject to hazards from slope instability.

HS-1.9 **Unstable Soils.** Require and enforce all standards contained in the International Building Code related to construction on unstable soils.

Policies related to soils in the Merced County General Plan are contained within the Natural Resources Element. Policies that may apply to the program include the following (Merced County 2013):

NR-3.1 **Soil Protection.** Protect soil resources from erosion, contamination, and other effects that substantially reduce their value or lead to the creation of hazards.

NR-3.2 **Soil Erosion and Contamination.** Require minimal disturbance of vegetation during construction to improve soil stability, reduce erosion, and improve stormwater quality.

3.2.3 Impact Assessment Methodology

Geology and Soils

The analysis of geologic impacts presented in this section was performed using qualitative methods that involved identifying the areas where geologic hazards, such as soil erosion and landslide hazards, could occur, and identifying the potential for various program activities and tasks to erode soil or destabilize slopes, resulting in localized landslides or soil erosion in those areas. The impacts presented in this section are based on the potential for implementation of the program to result in geological hazards or cause the loss of a geological resource.

Paleontological Resources

For this analysis, a *unique paleontological resource* is defined as including all resources that meet the SVP's (2010) definition of significant paleontological resources (i.e., "fossils and fossiliferous deposits…consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information"). Consistent with SVP (2010) guidance, paleontological resources are considered to be limited to materials older than middle Holocene (i.e., older than about 5,000 radiocarbon years).

The potential for impacts on paleontological resources was evaluated based on the geologic units along program pipeline alignments, as mapped by the USGS or CGS, and the paleontological sensitivity of the geologic units potentially involved in work along program pipeline alignments, as shown in Table 3.2-2 and detailed in Appendix F of this EIR. As described in Section 3.2.1, paleontological sensitivity reflects the potential to contain significant (scientifically important) fossil resources, as shown in Table 3.2-1.

Significance Criteria

The impacts of the program on geological resources would be considered significant if they exceeded the following standard of significance:

- **Impact GEO-1:** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
- **Impact GEO-2:** Result in substantial soil erosion or the loss of topsoil
- **Impact GEO-3:** Be located on a geologic unit or soil that is unstable, or that would become unstable because of the program, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse
- **Impact GEO-4:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
- **Impact GEO-5:** Have soil incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater
- **Impact GEO-6:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. These BMP conditions are included as part of the program, and the impact analyses were conducted assuming application of these practices and conditions. The following BMPs related to geology and soils from Valley Water's Best Management Practices Handbook are applicable to the program:

- **BMP WQ-4:** Limit Impacts from Staging and Stockpiling Materials
- **BMP WQ-5:** Stabilize Construction Entrances and Exits

- **BMP WQ-9:** Use Seeding for Erosion Control, Weed Suppression, and Site Improvement

Program-Specific Avoidance and Minimization Measures

As described in Chapter 2, Project Description, Valley Water would implement specific avoidance and minimization measures (AMMs) as part of the program to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to geology and soils are shown in Table 3.2-3.

Table 3.2-3 Geology and Soils-Specific AMMs

AMM No.	AMM Requirements
AMM GEO-1	**Avoidance of Access Routes with Slopes Greater than 20 Percent.** In considering access routes, slopes of greater than 20 percent will be avoided if possible. Subsequent to access, any sloped area will be examined for evidence of instability and either will be revegetated or filled as necessary to prevent future landslide or erosion.
AMM HYD-3	**Erosion Control Plan.** Before any ground-disturbing work, Valley Water will prepare an Erosion Control Plan. At a minimum, the Erosion Control Plan will include: • A proposed schedule of grading activities • Identification of any critical areas of high erodibility potential and/or unstable slopes and sensitive habitat areas • Contour and spot elevations indicating runoff patterns before and after grading • Identification of erosion control measures on slopes, lots, and streets (measures will be based on recommendations contained in the Santa Clara Valley Urban Runoff Pollution Prevention Program [2016], which directs practitioners to the most up-to-date California Stormwater Quality Association construction BMP manual.) • Soil stabilization techniques, such as short-term biodegradable erosion control blankets and hydroseeding
AMM HYD-5	**Flow Diversion Measure Implementation.** Where feasible, flows will be diverted around actively eroding areas, or areas that may erode when subjected to release flows to avoid the following: damage to Valley Water property or adjacent property; threats to public safety; and in-channel sedimentation and/or water quality concerns or other beneficial uses, such as riparian habitat or recreation. Flow diversion methods may include the use of flexible piping and/or placement of gravel bags to alter flow direction, or equivalent measures. The new flow path and release point will be monitored for signs of erosion.
AMM HYD-6	**Erosion Control and Dewatering Design.** To protect exposed soil and vegetated surfaces from erosion, existing adequate hard infrastructure (e.g., concrete, quick-setting concrete, or riprap spillways and bubblers/dissipators) or temporary dewatering measures (e.g., visqueen spillways) will be used for all water releases. Visqueen spillway design can include a wattle or gravel bag perimeter with a temporary hose that terminates into a geotextile bag to dissipate flows and filter out sediments, or debris that may be in a pipeline. Water releases will not occur directly over soil, which may erode into receiving watercourses or directly to receiving watercourse in such a way that erosion can occur at the release point.

AMM No.	AMM Requirements
AMM HYD-9	**Erosion Control and Monitoring.** The release location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, releases will be terminated until appropriate erosion control BMPs are installed. Monitoring will be conducted just before the start of the release and regularly (e.g., every hour, every 4 hours, daily) during the release. The monitoring frequency will depend on site conditions and the nature of the release.
AMM HYD-10	**Inspection and Restoration of Eroded Areas.** An environmental monitor will walk along each release drainage 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures shall be taken to correct the erosion, if necessary. Correction measures may include installation of soil stabilization measures (e.g., wattles), hydroseeding, and/or recontouring the land to its previous state.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement Santa Clara Valley Habitat Plan (VHP) conditions as part of the program. Therefore, impact analyses were conducted assuming application of these VHP conditions in VHP-covered program areas. The VHP conditions applicable to geology and soils are provided in Table 3.1-4.

Table 3.2-4 VHP Conditions Applicable to Geology and Soils

Condition No.	VHP Condition
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality
Condition 4	Avoidance and Minimization for In-Stream Projects
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance
Condition 12	Wetland and Pond Avoidance and Minimization

Note: VHP Conditions 3, 4, and 5 require compliance with a suite of avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided Table 2.7-4 in Chapter 2.

3.2.4 Impact Analysis

Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides (less than significant)

As shown in Figure 3.2-2, the program facilities are within an area featuring several earthquake faults that are susceptible to rupture and historically have experienced strong seismic ground-shaking. The Alquist-Priolo Earthquake Fault Zoning Maps indicate that the Santa

Clara Conduit in San Benito County crosses the San Felipe Alquist-Priolo fault zone and Calaveras Fault trace. In addition, various pipelines throughout the program area, including the West pipeline, Stevens Creek pipeline, Rinconada force main, Almaden Valley pipeline, Anderson force main, Main Avenue pipeline, and Snell pipeline cross Santa Clara County fault rupture hazard zones.

Implementation of the PMP could cause a significant impact if the program would exacerbate existing or future seismic hazards (by increasing the severity or likelihood of such hazards affecting people) that would not exist without program implementation. However, the inspection and maintenance activities contemplated under the updated PMP are for existing Valley Water facilities and infrastructure. The PMP does not include development of any substantial new structures or operational activities that could create or exacerbate ground-shaking risk to the surrounding population. Activities requiring minor facility additions (i.e., installation of new generators and surge tanks) or replacement would be required to comply with applicable seismic design standards in the CBC, which are designed to address seismic and geotechnical risks. Furthermore, the updated PMP would not involve construction of habitable structures that could expose people to adverse effects from earthquakes and strong seismic ground-shaking.

Workers could be at risk of injury or death from various program activities if those activities are conducted in an area where fault rupture or seismic-related ground failure, including liquefaction and landslide, occurred. However, seismic ground-shaking events are unpredictable, and the potential occurrence of such events coinciding with program activities would be low because of the infrequency of such events. Furthermore, risk of worker injury or death from program implementation would not differ from current implementation of the existing PMP. Earthquake safety training pursuant to OSHA and Cal/OSHA regulations is required and would minimize the potential for impacts on workers. Program activities would be limited to maintenance at or along existing infrastructure and would not involve excavation, earthmoving, grading, or import or export of materials at a scale that would result in changes to geologic or soil conditions at program work sites. Furthermore, as part of the updated PMP, Valley Water would implement AMM GEO-1, which would ensure that access roads used for the program would be stable and would not generate erosion or landslides. Thus, the program would not create additional geologic and soil effects related to seismicity, including rupture along faults, seismic ground-shaking, seismic-related ground failure, liquefaction, and landslides. Implementation of program activities would not cause an increased risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground-shaking, or seismic-related ground failure, including liquefaction and landslides. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact GEO-1.

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil (less than significant)

Implementation of some program activities could cause erosion and loss of topsoil through removal of vegetation on slopes, exposing soil through ground-disturbing activities such as excavation, and through uncontrolled release of dewatering onto permeable surfaces. As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Tasks with the potential to result in soil erosion or the loss of topsoil would include

- Dewatering
- Excavation, construction, and other ground disturbance
- Bank stabilization, erosion control, and energy dissipation device maintenance

Program activities such as bank stabilization that may impact hydrological conditions and/or water quality because of soil erosion also are discussed in Section 3.1, Hydrology and Water Quality.

Dewatering
Dewatering activities could cause erosion if not controlled. If release points provided inadequate release infrastructure, the release of water could cause erosion. The amount of water released during program-related dewatering would depend on various factors, including the season, length of pipeline requiring isolation, topography of the pipeline, and the volume and velocity of water that could be released into the recharge facilities or turnouts. As part of the program, Valley Water would implement a suite of program-specific AMMs to reduce the potential for erosion and loss of topsoil during dewatering activities. AMM HYD-5 would require that flows be diverted using flow diversion methods such as flexible piping and gravel bags around actively eroding areas to the extent feasible. AMM HYD-6 would protect exposed soil and vegetated surfaces from erosion by requiring that existing hard infrastructure or temporary dewatering measures (e.g., visqueen spillways) be in place at release point to avoid water release directly onto permeable surfaces that could experience erosion. AMM HYD-9 would require regular monitoring at release locations and the receiving water for signs of erosion. If erosion is observed, flow rates would be reduced or terminated until appropriate erosion control devices are installed. After release is completed, AMM HYD-10 would require that an environmental monitor survey release drainages to the termination of the drainage or 500 feet downstream to inspect for erosion. If downstream erosion is observed, AMM HYD-10 would also require that corrective measures be taken to reclaim and revegetate affected areas. In VHP-covered program areas, compliance with VPH conditions would also reduce the potential for erosion and loss of topsoil resulting from dewatering. Therefore, the program dewatering activities would not result in substantial soil erosion or loss of topsoil. The impact would be **less than significant**.

Excavation, Construction, and Other Ground Disturbance

Excavation would occur for repair and replacement of facility components (e.g., pipeline segments), which already are in place and often would be in previously engineered soils. If necessary, program work sites would be cleared of debris or vegetation before using backhoes or excavators to excavate around the existing facilities (e.g., pipelines, vaults, or access roads). Excavated spoil material would be stored within the right-of-way (ROW) during the maintenance activity or hauled to staging areas. Erosion could occur in sloped areas of recently disturbed bare soil that have not been properly restored or revegetated yet. Erosion also could occur from temporary stockpiles not properly protected from wind or precipitation. As part of the program, Valley Water or its contractors would implement Valley Water's standard BMPs, including BMP WQ-4, which would restrict staging and stockpiling materials to paved or disturbed areas, ensure that materials are not stockpiled where they could enter water bodies, and require that stockpiles are appropriately covered and contained. BMP WQ-5 also would be implemented, requiring that construction entrances and exits be stabilized to minimize soil track-out and avoid disturbance to surrounding areas. To provide stabilization, BMP WQ-9 would be implemented, which would require that areas be seeded with native seed as soon as is appropriate after activities are completed. Furthermore, Valley Water or its contractors would implement AMM GEO-1, which would require that slopes of greater than 20 percent be avoided to the extent feasible when considering access routes. If avoidance is infeasible, this measure would require that sloped areas be examined for evidence of instability and stabilized either by revegetation or fill. In VHP-covered program areas, compliance with VPH conditions would also reduce the potential for erosion and loss of topsoil resulting from ground disturbance. Therefore, the program-related ground disturbance would not result in substantial soil erosion or loss of topsoil. The impact would be **less than significant**.

Bank Stabilization, Erosion Control, and Energy Dissipation Device Maintenance

Bank stabilization, erosion control, and energy dissipation device maintenance may require work along banks, which could include installing hard structures and plantings to prevent erosion. Similar to the discussion of excavation, erosion could occur in sloped areas of disturbed bare soil or from temporary stockpiles that could be subject to erosion. As described above, as part of the program, Valley Water or its contractors would implement Valley Water's standard BMPs. Applicable BMPs would include BMP WQ-4, which would minimize the potential for erosion to occur from staging and stockpiling materials; BMP WQ-5, which would limit soil track-out and disturbance associated with vehicles; and BMP WQ-9, which would require that disturbed areas be reseeded promptly to provide stabilization. Implementation of AMM GEO-1 also would prevent impacts associated with access to bank stabilization sites in sloped areas. In VHP-covered program areas, compliance with VPH conditions would also reduce the potential for erosion and loss of topsoil. Therefore, the program-related ground disturbance would not result in substantial soil erosion or loss of topsoil for bank stabilization, erosion control, and energy dissipation device maintenance tasks would not result in substantial soil erosion or the loss of topsoil The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact GEO-2.

Impact GEO-3 and Impact GEO-4: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the program, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse (Impact GEO-3) and/or be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property (Impact GEO-4) (less than significant)

As shown in Figure 3.2-3 through Figure 3.2-6, program facilities are in areas with geologic units and soils that may be unstable because of geologic features, such as liquefaction, landslides, lateral spreading, expansive soil, and subsidence. Program activities would include pipeline repairs as well as repairs to system components, such as backup generators, manholes, meters, vaults, storage tanks, pump stations, and surge tanks. Program activities also could include repairing access roads and support structures, ranging from small repairs such as filling potholes, to larger linear excavations to perform maintenance on culverts, drainage ditches, bank stabilization, or slope failures for elevated access road fills.

Program activities would be limited to inspection, repair, and maintenance of existing infrastructure. The program would disturb soils in the immediate vicinity of existing facilities, but the footprints would be isolated and limited, and therefore would not have the potential to cause a far-reaching change in soil conditions that could create risks associated with unstable or expansive soils. Much of the program infrastructure is belowground, and thus would not have the potential to collapse on other structures or on people in the event of unstable or expansive soils. During activities requiring trenching, the potential would exist for soil collapse to occur within the trench, posing a hazard to crews working in or around the trench. The PMP would be required to adhere to OSHA regulation 29 CFR 1926.650, which requires that all excavations in which employees potentially may be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the sides of the excavation and the work area.

For repairs requiring excavation, after the repair work is completed, the excavated area typically would be backfilled with the same excavated material, unless the soil or geologic unit is unsuitable, in which case the appropriate engineered fill would be used for protection of the pipeline and related infrastructure. Program activities also would be completed in accordance with applicable American Water Works Association standards, including seismic standards. These guidelines are produced through joint efforts by industry groups to provide standard specifications for engineering and construction activities, and they are widely accepted by regulatory authorities and are regularly included in related standards, such as municipal building and grading codes. The program activities would be implemented in part to ensure

that program facilities would continue to be properly maintained and able to withstand unstable soil conditions.

Furthermore, as discussed under Impact GEO-2, implementation of AMM GEO-1 would require that use of access routes with a slope of greater than 20 percent be minimized to the extent feasible. If avoidance is infeasible, this measure would require that Valley Water or its contractors evaluate the condition of access routes after use and implement soil stabilization measures to reduce the potential for future landslides. Therefore, program activities would maintain existing infrastructure and would not have the potential to exacerbate existing unstable geologic or soil units, or to cause units to become unstable because of the program activities. The potential risk to life and property from program activities on unstable or expansive soils would be low. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact GEO-3 and Impact GEO-4.

Impact GEO-5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater (no impact)

No septic tanks or alternative wastewater disposal system would be installed as part of the program activities. Any need for sanitary services during program activities would be provided by portable toilets or existing facilities. **No impact** would occur.

Significance Determination
No Impact

Mitigation
No mitigation would be required for Impact GEO-5.

Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (less than significant with mitigation incorporated)

As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Tasks with the potential to result in damage to or destruction of significant paleontological resources would include:

- Dewatering
- Excavation, construction, and other ground disturbance

Dewatering
Dewatering could result in ground disturbance if it caused excessive erosion; therefore, excessive erosion would have the potential to result in exposure of and adverse impacts on unique paleontological resource if present at a release site. As discussed under Impact GEO-2,

erosion associated with dewatering activities would be controlled by implementation of various AMMs, including AMM HYD-5, which would require that flow be diverted around eroding areas; AMM HYD-6, which would require protection of exposed soil and vegetated surfaces; AMM HYD-9, which would require monitoring for signs of erosion during dewatering; and AMM HYD-10, which would require that corrective measures be implemented in the event of downstream erosion. Implementation of these AMMs as part of the program would reduce the potential for dewatering to cause excessive erosion. Furthermore, compliance with VPH conditions would also reduce the potential for erosion resulting from dewatering in VHP-covered program areas. Nonetheless, in the unlikely event that a paleontological resource is discovered during dewatering, program activities have the potential to damage or destroy the resource. If the discovery was determined to be a unique paleontological resource, the impact would be **significant**.

Excavation, Construction, and Other Ground Disturbance

Excavation and other ground-disturbing activities associated with the program would have the potential to result in disturbance or destruction of paleontological resources when such activities would affect geologic units containing scientifically important paleontological resources. This would include geologic units with high paleontological potential and also may include those with undetermined paleontological potential, depending on their actual fossil content.

As discussed in Section 3.2.1, various program facilities are situated partially or entirely on geologic units that are identified as paleontologically sensitive, based on their historical record of producing scientifically important fossil finds. Several other program pipelines are situated on geologic units with undetermined (or uncertain) paleontological sensitivity. Additional facilities are immediately underlain by materials that may not be sensitive but are known to be underlain in the subsurface by more sensitive materials. This includes areas where alluvial units of Holocene age, which typically have low paleontological sensitivity, are underlain at varying depths by Pleistocene strata, which has high paleontological sensitivity (Wentworth et al. 1999; Brabb et al. 2000; Wagner et al. 2002). In addition to predictable impacts associated with disturbance of geologic units known to have high paleontological sensitivity, some potential may exist for unanticipated fossil finds in areas not known to be sensitive.

Program activities involving excavation and ground disturbance would include repairs to existing water transmission and delivery infrastructure as well as repairs to existing access roads. Most of these facilities and roadways already are in place, and some level of disturbance already has occurred because of their initial construction; most of the proposed work is not expected to involve disturbance of previously undisturbed substrate materials, and thus the work would be unlikely to result in adverse effects on paleontological resources, even if the surrounding area has a high paleontological potential. However, if any program activities would require disturbance to previously undisturbed substrate materials (e.g., repairs that would require disturbance outside the original disturbance prism) with high or undetermined paleontological potential, these activities would have the potential to destroy unique paleontological resources. The impact would be **significant**.

Significance Determination
Significant

Mitigation
To reduce the impacts related to unique paleontological resources and unique geologic features, Valley Water would implement Mitigation Measure (MM) GEO-1 through MM GEO-5, as described below.

MM GEO-1: Unanticipated Fossil Discovery. If vertebrate remains or other potentially significant fossil resources are discovered during any program activity, all work in the immediate vicinity of the discovery will cease, the find will be protected in place, and workers will be required to notify Valley Water before the end of the workday. Valley Water will promptly assign qualified staff (i.e., a staff member meeting the criteria as a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology (SVP) Impact Mitigation Guidelines Revision Committee 2010, or most current revision), to evaluate the find and recommend appropriate follow-up treatment. Work may continue in other areas while evaluation (and, if needed, treatment) takes place, as long as the find can be adequately protected in the judgment of the qualified staff. Valley Water will be responsible for ensuring that the recommendations of the qualified staff regarding treatment and reporting are implemented.

MM GEO-2: Preliminary Screening of Ground Disturbance. All program activities involving ground disturbance in previously undisturbed sediment will be screened for their potential to involve geologic units with high or undetermined paleontological potential. Screening for activities involving only surface disturbance will consider the extent and depth of the proposed disturbance, the three-dimensional extent and severity of prior disturbance at the site, and the paleontological potential of surface-exposed geologic units. Screening for activities that involve subsurface disturbance (including excavation) also will consider the paleontological potential of potentially affected subsurface units, in addition to the parameters considered for surface disturbance–only activities. The screening results will inform the need for program activity-specific implementation of Mitigation Measures GEO-3 through GEO-5.

MM GEO-3: Assessment of Paleontological Potential in Areas of Undetermined Sensitivity. All ground-disturbing activities in previously undisturbed sediment in geologic units with undetermined paleontological potential, as documented in Appendix F (Fossil Content and Paleontological Potential by Geologic Unit) of this EIR, will be subject to program activity-specific evaluation by staff meeting SVP criteria for a qualified professional paleontologist (per Society of Vertebrate Paleontology (SVP) Impact Mitigation Guidelines Revision Committee 2010, or most current revision). Ground-disturbing program activities situated on alluvial units of Holocene age also will undergo evaluation by a qualified professional paleontologist, to assess their potential to involve underlying paleontologically sensitive units (units with high paleontological potential), based on anticipated depth of disturbance and site-specific

geology. Evaluations will be conducted consistent with SVP protocols (SVP Impact Mitigation Guidelines Revision Committee 2010, or most current revision) and will inform the need for program activity-specific implementation of MM GEO-4 and also may recommend additional or alternate measures if appropriate.

MM GEO-4: Paleontological Resources Mitigation Plan. For all program activities with reasonably foreseeable potential to result in ground disturbance in previously undisturbed sediment (including excavation) in geologic units with high paleontological potential, as defined by the Society of Vertebrate Paleontology (SVP), Valley Water will retain qualified staff to develop a Paleontological Resources Mitigation Plan (PRMP). "*Qualified staff*" is here defined as referring to staff meeting SVP criteria for a qualified professional paleontologist (per SVP Impact Mitigation Guidelines Revision Committee 2010, or most current revision).

The PRMP will be consistent with the SVP's Standard Procedures for the Assessment and Mitigation of Adverse Impacts on Paleontological Resources (SVP Impact Mitigation Guidelines Revision Committee 2010) and Conditions of Receivership for Palaeontologic Salvage Collections (SVP Conformable Impact Mitigation Guidelines Committee 1996), or subsequent revisions of these documents. Thus, this mitigation measure will provide for at least the following.

- Performing implementation by qualified personnel, including a supervising paleontologist who meets the requirements for a qualified professional paleontologist as defined by the SVP, and monitor(s) who satisfy the SVP's requirements for paleontological resource monitors (SVP Impact Mitigation Guidelines Revision Committee 2010 or most current revision)
- Conducting worker awareness training, per Mitigation Measure GEO-5
- Performing a preconstruction survey with salvage or protection in place, in any areas where surface disturbance of geologic units with high paleontological potential will occur
- Conducting preconstruction and construction-period coordination, following procedures and communications protocols
- Monitoring of ground-disturbing (surface and subsurface) activities known to involve, or potentially involving, geologic units with high paleontological potential. In all areas subject to monitoring, monitoring initially will be conducted full-time for grading and excavation, but the PRMP may provide for monitoring frequency in any given location to be reduced after 50 percent of the ground-disturbing activity has been completed, based on the professional judgment of the supervising paleontologist.

- Making provisions for a "stop work, evaluate, and treat appropriately" response in the event of a paleontological discovery, with appropriate treatment identified by the supervising paleontologist, based on the nature of the find and prevailing standards for paleontological resources protection
- Using sampling and data recovery procedures that are consistent with SVP protocols (SVP Impact Mitigation Guidelines Revision Committee 2010 and Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1996, or most current revisions)
- Adhering to a repository agreement that provides for appropriate curation of any recovered materials, consistent with SVP requirements (SVP Conformable Impact Mitigation Guidelines Committee 1996 or most current revision)
- Following procedures for preparation, identification, and analysis of fossil specimens and data recovered, consistent with SVP requirements (SVP Conformable Impact Mitigation Guidelines Committee 1996 or most current revision) and any additional requirements of the designated repository institution
- Adhering to reporting procedures consistent with SVP requirements (SVP Impact Mitigation Guidelines Revision Committee 2010 or most current revision)

Before mobilization for any program tasks determined to warrant a PRMP, Valley Water will retain a supervising paleontologist who meets SVP standards for a qualified professional paleontologist (SVP Impact Mitigation Guidelines Revision Committee 2010 or most current revision) to implement the requirements of the PRMP. This person may, but will not necessarily, be the same individual who prepared the PRMP. Valley Water will be responsible for ensuring proper implementation of the PRMP.

MM GEO-5: Paleontological Resource Worker Awareness and Training. To support effective PRMP implementation and address the potential for unanticipated discoveries where a PRMP is not required, Valley Water will retain qualified staff to present in-person, hands-on worker awareness training for paleontological resources, to facilitate recognition of fossils in the field by construction staff. Training will be delivered before the start of ground disturbance in previously undisturbed sediment. As used here, "*qualified staff*" refers to an individual who satisfies one or both of the following criteria.

- A qualified professional paleontologist as defined by the Society of Vertebrate Paleontology (SVP) (SVP Impact Mitigation Guidelines Revision Committee 2010, or most current revision), who is experienced in delivering training to non-specialists
- A California-licensed professional geologist (PG) who has expertise in Santa Clara County/south San Francisco Bay Area Valley stratigraphy and paleontology and is experienced in delivering training to non-specialists

Training will include information on the possibility of encountering fossils during program activities, the types of fossils that may be seen and how to recognize them, and proper procedures in the event fossils are encountered. All field management and supervisory personnel and workers who are involved with ground-disturbing activities will be required to take this training before beginning work on any program activity. On completion of the training, workers will be required to sign a form stating that they attended the training, understand, and will comply with the information presented.

Significance after Mitigation

In advance of program-related activities that include excavation or ground disturbance, Valley Water would implement MM GEO-1 and MM GEO-5, which would require preconstruction paleontological resource training for crewmembers and performing conservation measures in the event of an unanticipated fossil find. With implementation of MM GEO-1 and MM GEO-5, the impact on paleontological resources from unanticipated discoveries would be reduced, consistent with the prevailing standard of care. The impact would be **less than significant with mitigation incorporated**.

3.3 Biological Resources

This section provides an overview of the terrestrial and aquatic biological resources in the program area; applicable federal, state, and local regulations; and a discussion of the program's potential impacts related to biological resources.

3.3.1 Environmental Setting

For the purposes of this section, the *program area* is defined as all of the raw, treated, and recycled water pipelines and associated infrastructure in Valley Water's system that are covered under the program, as well as an adjacent buffer of 100 feet. The *program area vicinity* is defined as the area within a 5-mile radius surrounding the program area. Although several tunnels with buried sections are included in the program area (the Pacheco, Santa Clara, and Santa Teresa Tunnels), no program activities or impacts on biological resources would occur along buried sections of these tunnels; thus, biological resources along buried sections of tunnels are not assessed in this EIR.

To establish the environmental setting within the program area, reviews of background data and information and desktop-level sources were conducted, as well as field reconnaissance surveys. The methods used to conduct these reviews are detailed below.

Background Review

To identify biological resources in the program area vicinity, H. T. Harvey & Associates ecologists reviewed the November 2022 Draft of the *Santa Clara Valley Water District Pipeline Maintenance Program Manual Update,* as well as program area maps provided by Panorama Environmental, Inc. and Valley Water through August 2023, aerial images (Google LLC 2024), a U.S. Geological Survey (USGS) topographic map, NRCS soil survey maps (2024), the CDFW's California Natural Diversity Database (CNDDB) (2024), and habitat and species information from the VHP, as well as the following documents that contained useful information on biological resources in the program area vicinity:

- the CESA Incidental Take Permit Application for the San Felipe System Calaveras Fault Access Road Culvert Replacement Project, San Benito County, California (H. T. Harvey & Associates 2015);
- the Pacheco Reservoir Expansion Project Draft Environmental Impact Report (EIR) (AECOM 2021);
- the 2007 Santa Clara Valley Water District Pipeline Maintenance Program Draft (MHA Environmental Consulting 2007a) and Final EIR (MHA Environmental Consulting 2007b);
- the Cross Valley and Calero Pipeline Rehabilitation Biological Resources Report (H. T. Harvey & Associates 2018);
- the Santa Clara Valley Water District Hazard Tree Program Biological Resources Report (H. T. Harvey & Associates 2019a);

- Valley Water's Pacheco/Santa Clara Conduit Right-of-Way Acquisition Project (San Benito County) Biological Assessment (U.S. Department of the Interior 2021) and Draft and Final Mitigated Negative Declaration for the project (Valley Water 2021a, 2021b);
- the Santa Clara Valley Water District Stream Maintenance Program Update (2012–2022) Final Subsequent EIR (Horizon Water and Environmental 2011); 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 *Milpitas*, *Calaveras Reservoir*, *Cupertino*, *San Jose West*, *San Jose East*, *Los Gatos*, *Santa Teresa Hills*, *Morgan Hill*, *Mt. Sizer*, *Mt. Madonna*, *Gilroy*, *Chittenden*, *San Felipe*, *Pacheco Peak*, and *Pacheco Pass* USGS 7.5-minute quadrangles in which the program area is located (for CNPS), as well as within the program area vicinity (for CNDDB), were reviewed. Bumble Bee Watch (2024) and iNaturalist (2024) were queried for records of special-status invertebrates within the program area vicinity, and records of birds reported in nearby areas on eBird (Cornell Lab of Ornithology 2024) were reviewed.

Because most program activities and areas are covered under the VHP, and the remainder of program activities occurring within Santa Clara County are proposed for VHP inclusion via an amendment expected to be approved in 2026, VHP mapping of land cover types, including mapping of new areas in northern Santa Clara County for the forthcoming VHP amendment, was used to characterize land cover in the program area for the purpose of this assessment. A map showing the portions of the program area that fall within the VHP permit area is provided as Figure 3.3-1. Where VHP land cover mapping was not available (i.e., in San Benito and Merced counties), biotic habitats were assessed using a combination of available habitat maps for these areas (e.g., from the Pacheco Reservoir Expansion Project and Pacheco/Santa Clara Conduit Right-of-Way Acquisition Project), habitat data for the San Felipe Lake area provided Valley Water, a review of aerial imagery, and knowledge of conditions by Valley Water and H. T. Harvey biologists. VHP land cover terminology was used for habitats in San Benito and Merced counties for consistency.

Figure 3.3-1 Program Area and VHP Permit Area

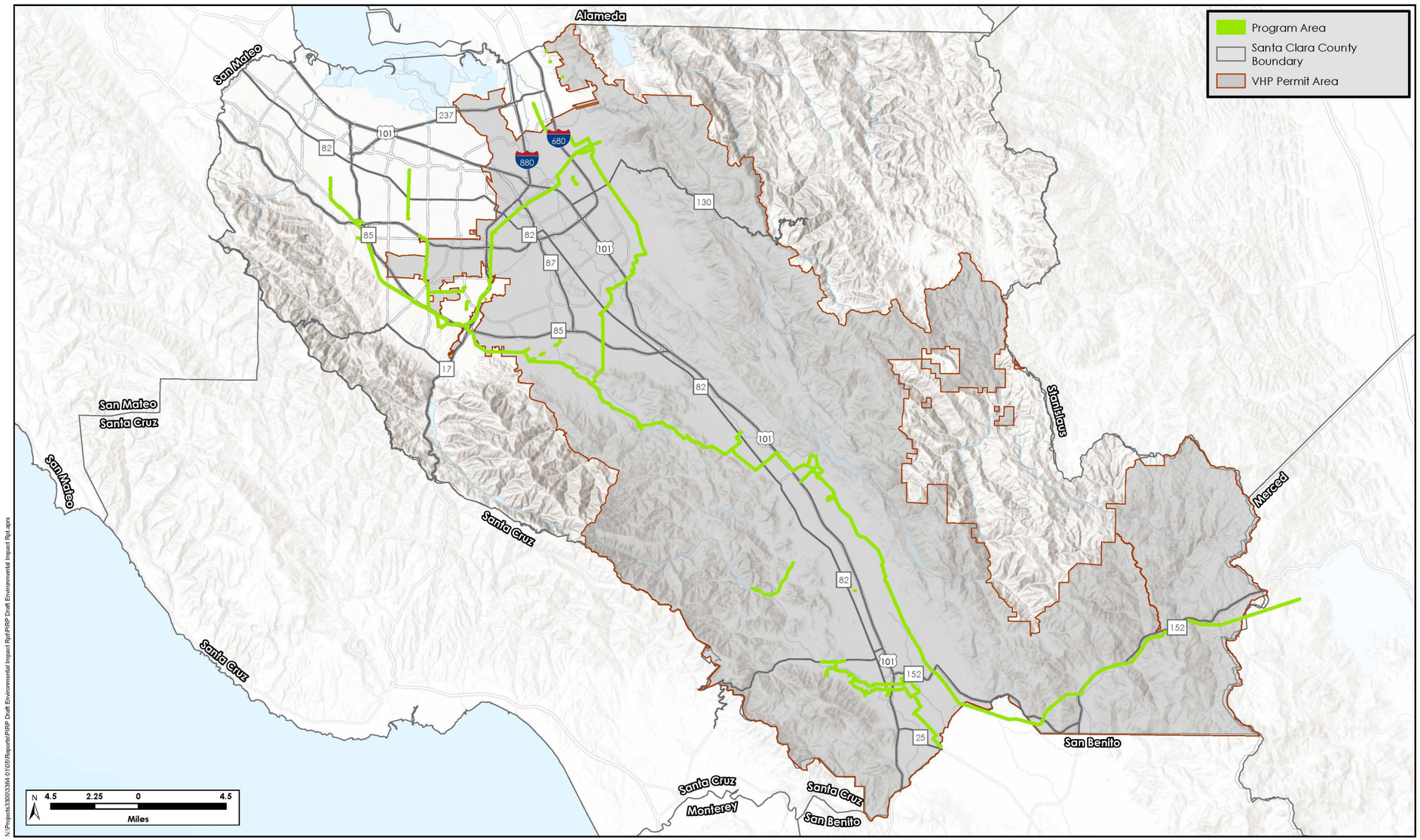


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Figure 1. Program Area and VHP Permit Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
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Field Reconnaissance Surveys

Valley Water has conducted numerous surveys over the past several decades for rare plants along program area pipelines in several areas, as discussed below, and these data were also referenced in the description of existing biological conditions in the program area:

- Protocol-level surveys conducted in the southern portion of the program area in support of Valley Water projects have detected several special-status plant species in the area surrounding San Felipe Lake, and along the Pacheco Conduit and Santa Clara Conduit. These include Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*), spiny-sepaled button-celery (*Eryngium spinosepalum*), prostrate vernal pool navarretia (*Navarretia prostrata*), saline clover (*Trifolium hydrophilum*), and San Joaquin spearscale (*Extriplex joaquiniana*).
- Protocol-level surveys for rare plants conducted along the Cross Valley and Calero Pipelines detected smooth lessingia (*Lessingia micradenia* var. *glabrata*) along the Cross Valley Pipeline and Hall's bush-mallow (*Malacothamnus hallii*) along the Calero Pipeline.
- Protocol-level surveys conducted within suitable habitat along the Snell Pipeline in 2022, including adjacent to the Santa Teresa Water Treatment Plant and at Valley Christian Schools, did not detect special-status plant species within program work areas.

Program Area

The program area is located within unincorporated Santa Clara, San Benito, and Merced counties and includes facilities in the following local jurisdictions: Cupertino, Campbell, Morgan Hill, Los Gatos, San Jose, Los Altos, Sunnyvale, Saratoga, Milpitas, Gilroy, and Santa Clara. Within Santa Clara County, the majority of the program area is located within the VHP permit area, and the remaining portions of the program area within Santa Clara County may be located within the VHP permit area in the future following the VHP amendment in progress. Portions of the program area located within San Benito County are similarly likely to be located within Plan area for the San Benito County Conservation Plan (SBCCP; discussed in Section 3.3.2) in the future if and when that plan is adopted. In Merced County, the program area is limited to the Pacheco Pumping Station and immediately surrounding areas, which are not within the plan area for a HCP/natural community conservation plan (NCCP).

The program area has a coastal Mediterranean climate characterized by mild, wet winters, and warm, dry summers. This area is characterized by unique 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, and soils vary considerably throughout the program area. Soils in and immediately surrounding San Francisco Bay tend to be fine-textured, clayey soils that were deposited by tidal events. Soils in the 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 habitats and associated wildlife communities are discussed throughout this chapter. Within the program area vicinity, areas of serpentine soils are located 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, Tulare Hill, and at Valley Christian Schools (Figure 3.3-2) (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 area and is surrounded by the Santa Cruz Mountains to the west, the Diablo Range to the east, and San Francisco Bay to the north. Plant communities in the Diablo Range 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. For purposes of this document, only the land cover types that would potentially be directly affected by program activities, defined as those mapped by the VHP or Valley Water within 100 feet of program pipelines, are described in detail.

Natural communities and land cover types within the program area are classified according to the system described in the VHP (ICF International 2012), with the exception of one habitat type (alkaline grassland) located at San Felipe Lake that is absent from the VHP's permit area and that has been 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 can potentially be affected by program 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* (Baldwin et al. 2024).

Maps of natural communities and land cover types within the program area are not provided for this assessment due to the large scale of the program and the need to field-verify VHP land cover types throughout the program area. VHP natural communities and land cover types are mapped on the Santa Clara Valley Habitat Agency's (Habitat Agency's) Geobrowser (Habitat Agency 2024) for areas that are currently within the VHP permit area, and have been mapped in additional areas of Santa Clara County to support the forthcoming VHP Amendment. Natural communities and land cover types in the San Felipe Lake area in San Benito County were mapped by Stantec for Valley Water in support of the Pacheco Reservoir Expansion Project (AECOM 2021).

Grassland

Program activities can potentially affect six grassland community types in the program area: California annual grassland, non-serpentine native grassland, rock outcrop (non-serpentine), serpentine rock outcrop/barrens, serpentine bunchgrass grassland, and alkaline grassland.

California Annual Grassland

California annual grassland habitat is widespread in the program area and occurs commonly on undeveloped parcels. The largest expanses of this habitat are present within and adjacent to the program area along the Santa Clara Conduit, Pacheco Conduit, Uvas-Llagas Transfer Pipeline, Calero Pipeline, Cross Valley Pipeline, Almaden Valley Pipeline, and portions of the Snell Pipeline. Where grasslands 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 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 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 activities are projected to occur. However, the more extensive grasslands located on the periphery of the Valley floor along the Santa Clara Conduit, Uvas-Llagas Transfer Pipeline, Calero Pipeline, Cross Valley Pipeline, Almaden Valley Pipeline, and portions of the Snell Pipeline, as well as in eastern Santa Clara County and Merced County along the Pacheco Conduit, are contiguous with larger expanses of grassy open space, and thus provide higher-quality habitat for grassland-associated wildlife species.

Figure 3.3-2 Project Program Activities in Serpentine Communities

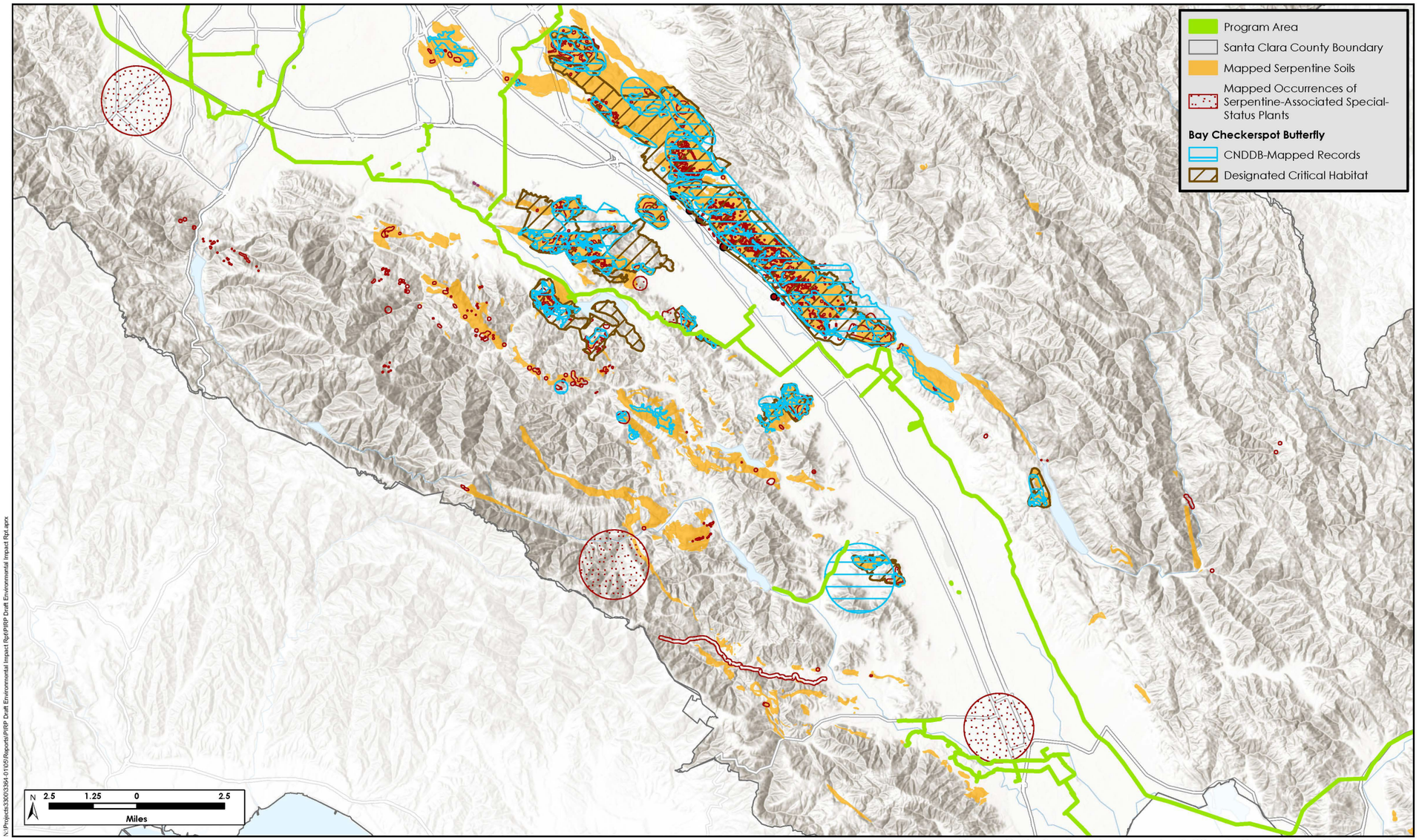

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Figure 2. Projected Program Activities in Serpentine Communities
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California ground squirrels (*Otospermophilus beecheyi*), where they are present, are an important component of grassland communities, 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 (*Athene cunicularia*) and California tiger salamander (*Ambystoma californiense*) in portions of the program area where these species occur. Other rodent species that are present in grassland habitats in the program 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 (*Elanus leucurus*), and American kestrels (*Falco sparverius*) forage for these small mammals over grasslands during the day, and at night nocturnal raptors, such as barn owls (*Tyto alba*), forage for nocturnal rodents, such as deer mice. Several grassland-associated special-status bird species, such as the grasshopper sparrow and loggerhead shrike (*Lanius ludovicianus*), nest and forage in more extensive grassland habitats in the program area.

Grasslands provide foraging habitat for bat species that roost in the program area and surrounding vicinity, such as the common Mexican free-tailed bat (*Tadarida brasiliensis*) and Yuma myotis (*Myotis yumanensis*). A number of terrestrial mammals also occur in grasslands throughout the program 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 (*Taxidea taxus*) and black-tailed jackrabbit (*Lepus californicus*) prefer more extensive grasslands, generally those located on the periphery of the Valley floor and along the Pacheco Conduit. Tule elk (*Cervus canadensis nannodes*) inhabit open grasslands in portions of the program area in the Diablo Range. Reptiles such as western fence lizards (*Sceloporus occidentalis*), forest alligator lizards (*Elgaria multicarinata multicarinata*), Skilton's skinks (*Plestiodon skiltonianus skiltonianus*), coast garter snakes (*Thamnophis elegans terrestris*) (in most of Santa Clara County) and Valley garter snakes (*Thamnophis elegans fitchi*) (in southeastern Santa Clara County, San Benito County, and Merced County), Pacific gopher snakes (*Pituophis catenifer catenifer*), racers (*Coluber constrictor*), northern Pacific rattlesnakes (*Crotalus oreganus oreganus*), and California kingsnakes (*Lampropeltis californiae*) 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 in the program area, and typically includes a component of native purple needlegrass (*Stipa 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 area are those that are associated with California annual grasslands that typically abut or surround these habitats, described above.

Serpentine Rock Outcrop/Barrens

Several areas along the Cross Valley and Snell Pipelines are mapped as serpentine rock outcrop. Serpentine rock outcrop is comprised of grassland or scrub habitat that is affected by serpentine bedrock at the soil surface. In between exposed rocks, the soils tend to be thinner and more nutrient-poor than surrounding soils with a greater depth to bedrock. The effect of the thin, poor soils helps to reduce density and canopy cover on non-native annual grasses that tend to out-compete native forbs and serpentine-adapted plants in areas with less serpentine influence or a greater depth to bedrock. Additionally, the outcrops themselves provide unique habitat for species that typically colonize rock crevices and areas with very little soil, particularly federally endangered Santa Clara Valley dudleya (*Dudleya setchellii*). Other species within this habitat type are similar to those that occur in serpentine bunchgrass grasslands.

Serpentine Bunchgrass Grassland

Serpentine bunchgrass grassland is mapped by the VHP along the Cross Valley and Snell Pipelines, and may be present in additional areas where the pipelines extend through serpentine soils (i.e., along the Penitencia Delivery Main, Almaden Valley Pipeline, Calero Pipeline, and Cross Valley Pipeline). Nonnative annual grass species are often present in varying abundances in serpentine bunchgrass grassland habitat. However, areas of serpentine bunchgrass grassland have a greater component of natives as well as a lower density of vegetation, distinguishing these areas from California annual grasslands.

Native plants that occur within this habitat include grasses such as purple needlegrass and small fescue (*Festuca microstachys*); shrubs such as toyon (*Heteromeles arbutifolia*); and forbs such as dwarf plantain (*Plantago erecta*), hayfield tarweed (*Hemizonia congesta*), blow wives (*Achyrachaena mollis*), gumweed (*Grindelia hirsutula*), popcorn flower (*Cryptantha* sp.), naked buckwheat (*Eriogonum nudum*), and California poppy (*Eschscholzia californica*).

In some parts of the South Bay, the Bay checkerspot butterfly (*Euphydryas editha bayensis*) occurs in native serpentine bunchgrass grassland communities that support dense stands of its primary larval food plant, dwarf plantain. Bird species that occur within the program area in serpentine bunchgrass grassland habitats include the rufous-crowned sparrow (*Aimophila ruficeps*) and rock wren (*Salpinctes obsoletus*). These species are well adapted to the patchy distribution of bunchgrass vegetation in serpentine habitats.

Alkaline Grassland

Alkaline grassland is present along the Santa Clara Conduit in San Benito County, near San Felipe Lake. No alkaline grassland occurs in Santa Clara County. Alkaline grasslands occur over highly alkaline soils, especially heavy clays, and often are more mesic than surrounding grasslands as repetitive filling and evaporation of seasonally mesic areas tends to increase salt content of the soils in those areas over time. Species associated with this habitat include native grasses such as meadow barley (*Hordeum brachyantherum*), salt grass (*Distichlis spicata*), and beardless wild-rye (*Elymus triticoides*), as well as native forbs such as alkali weed (*Cressa truxillensis*) and sticky sand spurrey (*Spergularia macrotheca*). Rare plant species found in alkaline

grassland near the Santa Clara Conduit include San Joaquin spearscale. Non-native chenopode species such as fat hen (*Atriplex prostrata*) are also common in this habitat.

Chaparral and Northern Coastal Scrub
Program activities can potentially affect coyote brush scrub, northern coastal scrub/Diablan sage scrub, and northern mixed chaparral/chamise chaparral, which occur adjacent to program pipelines. These land cover types are described in detail below.

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 area, and is located only below the Calero Main Dam along the Santa Teresa and Calero Pipelines.

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. The typical subdominant species found in coyote brush scrub communities is California sagebrush (*Artemisia californica*).

The area where coyote brush scrub habitat occurs in the program area is small and 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*) often are present where oaks and/or poison oak (*Toxicodendron diversilobum*) 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 (*Callipepla californica*), wrentit (*Chamaea fasciata*), loggerhead shrike, lesser goldfinch (*Spinus psaltria*), and Anna's hummingbird (*Calypte anna*). Rufous-crowned sparrows often nest where this habitat supports California sagebrush. Reptiles that occur in these habitats include the Pacific gopher snake, northern Pacific rattlesnake, forest 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 area along the Uvas-Llagas Transfer, Anderson Force Main, Main Avenue Pipeline, Almaden Valley Pipeline, and Pacheco Conduit. 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, and brush rabbit. Reptiles that occur here include the Pacific gopher snake, northern Pacific rattlesnake, forest alligator lizard, and western fence lizard.

Northern Mixed Chaparral/Chamise Chaparral

Within the program area, northern mixed chaparral/chamise chaparral occurs at the eastern terminus of the Pacheco Tunnel. 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.

Mixed Serpentine Chaparral

Mixed serpentine chaparral occurs in the program area along the Pacheco Conduit. Common shrubs in this habitat include California sagebrush (*Artemisia californica*), toyon (*Heteromeles arbutifolia*), coyote brush, and bigberry manzanita (*Arctostaphylos glauca*).

Mixed serpentine chaparral provides nesting habitat for birds such as the California scrub-jay, 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, and brush rabbit. Reptiles that occur here include the Pacific gopher snake, northern Pacific rattlesnake, forest alligator lizard, and western fence lizard.

Oak Woodland

Oak woodland communities are common throughout the program area, and program activities can potentially impact any of the oak woodland community types classified by the VHP. These communities typically occur at elevations above 300 feet in the program 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, poison oak, California coffeeberry (*Rhamnus californica*), and common snowberry (*Symphoricarpos albus* var. *laevigatus*).

Differences in habitat characteristics between the various oak woodland types that occur throughout the program 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 Pacific gopher snakes, coast and Valley garter snakes, 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 Skilton's skink.

Valley Oak Woodland

Large, mature, and evenly spaced valley oak trees dominate the overstory of the valley oak woodland land cover type. This land cover type is mapped in the program area along the Pacheco Conduit and Rinconada Force Main.

Mixed Oak Woodland and Forest

The mixed oak woodland and forest community is mapped along many pipelines in the program area, and 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, and is mapped along many pipelines in the program area. 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 area compared to other oak woodland communities, and is mapped only along the Pacheco Conduit, Cross Valley Pipeline, and Calero Pipeline. 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.

Riparian Forest and Scrub
Riparian forest and scrub communities occur along creeks and rivers in the program area. Program activities can potentially impact riparian communities where pipelines intersect streams in the program area.

Even though riparian land cover is limited in the program 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 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 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 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 area, nonnatives abound as well, including exotic species such as eucalyptus (*Eucalyptus* spp.), 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, and wildfire damage has occurred along some urban streams in the program area.

Willow Riparian Forest and Scrub

Willow species, such as the yellow willow (*Salix lucida* ssp. *lasiandra*), 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 area. Most willow riparian habitat in the program 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 (*Rubus ursinus*), 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 streams in the program 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 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 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 bird species, such as the Wilson's warbler (*Cardellina pusilla*), and Swainson's thrush (*Catharus ustulatus*), as well as wintering species such as the ruby-crowned kinglet (*Corthylio calendula*).

Several species of reptiles and amphibians occur in these riparian corridors in the program area. Leaf litter, downed tree branches, and fallen logs provide cover for the arboreal salamander, California toad (*Anaxyrus boreas halophilus*), and Pacific treefrog (*Hyliola regilla*). Several lizards may also occur here, including the western fence lizard, Skilton's skink, and forest alligator lizard. Western 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) 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 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 2024), is uncommon in the program area and, including only areas within 100 feet of program facilities, is only mapped along Pacheco Creek east of Gilroy along the Pacheco Conduit. 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 (*Umbellularia californica*). 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 Forest and Scrub* above. In addition, large sycamore trees present in this community provide roosting habitat for a number of species of bats, including the Mexican free-tailed bat, Yuma myotis, 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 area, including along Pacheco Creek, Uvas-Carnadero Creek, Llagas Creek, Coyote 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 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, 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 area include perennial streams (creeks or 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.

Three general stream types occur in the program 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. 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 California toad and Pacific treefrog and nonnative American bullfrog (*Lithobates catesbeianus*) are common in perennial and longer-lasting intermittent creeks and streams throughout the program 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, including several species of native fishes, also use the perennial and intermittent creek and stream channels in the program. The rivers and creeks of Santa Clara County are home to 12 native and 24 nonnative species of fish (Valley Water 1995, Leidy 2007). The most species-rich creek in terms of the number of fish species supported is Coyote Creek, with 12 native species (Valley Water 1995, Leidy 2007).

According to Valley Water fish sampling and relocation data (2002-2009) and Leidy (2007), the most common native fish in program area streams draining to San Francisco Bay include the southern coastal roach (*Hesperoleucus venustus subditus*), , Sacramento sucker (*Catostomus occidentalis*), and prickly sculpin (Cottus asper)(, which occur in most watersheds and sub-watersheds in the program area. The federally threatened Central California Coast steelhead (*Oncorhynchus mykiss*); as well as the fall-run Chinook salmon (*Oncorhynchus tshawytscha*) and Pacific lamprey (*Entosphenus tridentatus*), both California species of special concern; are anadromous fish that spawn in several of these streams, such as Coyote Creek, Upper Penitencia Creek, and the Guadalupe River (Valley Water 2007). 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*), Sacramento pikeminnow (*Ptychocheilus grandis*), and threespine stickleback, as well as the South-Central California Coast steelhead (*Oncorhynchus mykiss*) (Smith 1982).

A number of nonnative fishes have been introduced to the program area, including the western 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*), golden shiner (*Notemigonus crysoleucas*), and threadfin shad (*Dorosoma petenense*). Although fish in program area creeks consist of a mix of native and nonnative species, most of the fish occurring in off-channel ponds and lakes are nonnatives.

Wetland

Coastal and Valley Freshwater Marsh

In the program 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., Permanente Creek and the 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 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 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 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 also use these wetlands for cover and foraging habitat. Amphibians such as the native Pacific treefrog and California toad, as well as the nonnative American bullfrog, also are present in this habitat. Coast garter snakes forage in these wetlands for amphibian larvae.

Seasonal Wetland

The majority of seasonal wetlands in the program area are mapped along the Santa Clara Conduit near San Felipe Lake, with the exception of a wetland mapped along the Main Avenue Pipeline in Morgan Hill. Seasonal wetlands in the program area typically occupy smaller, more discrete areas compared to freshwater marshes. The seasonal wetland near San Felipe Lake is alkaline and contains rare species such as prostrate navarretia, Hoover's button celery and saline clover.

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*). In the vicinity of San Felipe Lake and the Santa Clara Conduit, rare plant species include Hoover's button celery and prostrate vernal pool navarretia.

Wildlife use of seasonal wetlands in the program 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 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 nest in these habitats where they support tall, dense emergent vegetation. A variety of finches, sparrows, and other birds that nest in nearby habitats 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 California toads and Pacific treefrogs, 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 (*Rana draytonii*), if they hold water into June. Coast and valley garter snakes forage in these wetlands for amphibian larvae.

Open Water

Open water habitats are permanently or semi-permanently flooded, and support less than 5 percent vegetation in emergent or submerged states. Ponds in the program area include isolated ponds and percolation ponds (off-stream groundwater recharge ponds).

Pond

Very few naturally occurring ponds exist in the program area. Many human-made ponds, including old gravel excavation sites, stock ponds, percolation ponds, or ornamental ponds associated with golf courses and parks, occur.

Amphibian species that breed in ponds throughout the program area include the native Pacific treefrog and California toad, as well as the nonnative bullfrog. Northwestern pond turtles are known to occur in small ponds throughout the program area (H. T. Harvey & Associates 1999a and 2012a, CNDDB 2024). Several nonnative turtle species have been introduced into pond habitats in the program area as well. California tiger salamanders are known to breed in ponds on the periphery of the program area where upland habitat is available; they breed most successfully in ponds where nonnative aquatic predators, such as bullfrogs, green sunfish, mosquitofish, and Louisiana red crayfish (*Procambarus clarkii*), are absent (H. T. Harvey & Associates 1999b and 2012b). California red-legged frogs are also known from ponds in a few locations on the periphery of the program area; however, this species is largely absent from urbanized and agricultural portions of the Valley floor (H. T. Harvey & Associates 1997). The common Diablo Range gartersnake (*Thamnophis atratus zaxanthus*) inhabits ponds and other aquatic habitats in the program area, where it feeds on amphibians, larvae, and small fish.

Common resident birds that occur in larger ponds throughout the program 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.

Irrigated Agriculture

Agricultural land cover types are common in the program 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 2009). These land cover types occur adjacent to projected program work areas in many locations.

Orchard

Orchards in the program 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 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 occur in these areas, often along margins of fields, and raptors such as red-tailed hawks, American kestrels, and white-tailed kites 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, raccoon, and bobcat may move through orchards in the program area. However, orchards provide little cover and few food resources for carnivorous species, and most mammal movement through the program area is expected to occur through habitats offering more resources for these species.

Vineyard

Vineyards in the program 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 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*) also occur here, but nest in surrounding areas. Other native birds, such as the black phoebe, 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, barn owls, grey foxes (*Urocyon cinereoargenteus*), Pacific gopher snakes, northern Pacific rattlesnakes, and other predators. Birds such as Canada geese, finches, sparrows, and blackbirds 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 depend upon the management of individual fields.

Developed

Developed land cover types occur within city limits and in rural portions of the program area. These land cover types occur adjacent to projected program work areas in many locations.

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 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 Pacific 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 nest and forage in landscape vegetation. In addition, the eaves and corners of buildings and bridges within the program area provide attractive nesting sites for black phoebes and cliff swallows (*Petrochelidon pyrrhonota*). Additionally, large nonnative trees (as well as native trees, where they are present) provide potential nesting sites for raptors, such as Cooper's hawks.

Rural-Residential

Rural residential areas 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). 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 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*) and/or native trees such as oaks.

Wildlife species that occur in golf courses and urban parks in the program 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 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 eucalyptus trees are present along migratory pathways (e.g., near the San Francisco Bay or along major stream courses on the Valley floor), migrants and winter residents 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.

Sensitive Natural Communities, Vegetation Alliances, and Habitats

Waters of the U.S./State

As described in Section 3.3.2, impacts to wetlands and other waters of the U.S. are regulated under Clean Water Act (CWA) Section 404, and impacts to waters of the state are regulated under CWA Section 401 and the Porter-Cologne Water Quality Control Act. A number of aquatic and wetland features throughout the program area are expected to be considered waters of the U.S. by the USACE and/or waters of the state by the RWQCBs. These features include the riverine, open water, and wetland land cover types described above. 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 and seasonal wetland, are also present. The precise extent to which these features are jurisdictional waters of the U.S. and/or state would be determined by Valley Water in jurisdictional delineations performed during the course of the program and verified by the USACE and/or RWQCBs as necessary.

Whereas USACE jurisdiction over waters of the U.S. extends upslope only as far as the ordinary high water mark along federally jurisdictional streams in the program area, the RWQCBs 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. Additionally, if the USACE were to disclaim certain streams as waters of the U.S. for being ephemeral, the RWQCB may still claim such features. Therefore, the extent of waters of the state in the program area is greater than the extent of waters of the U.S.

Beds and Banks Regulated under the Fish and Game Code Sec. 1600 et seq.

As described in Section 3.3.2, the CDFW regulates diversions or activities that alter the bed and banks of rivers, lakes, and streams in California. In the program area, features whose alteration would be regulated by the CDFW under Section 1600 of the Fish and Game 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, and riparian habitats along streams. 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 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 in 1979. The CDFW determines the level of rarity and imperilment of vegetation types. 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 methodology as follows:

- G1/S1: Critically imperiled
- G2/S2: Imperiled
- G3/S3: Vulnerable
- G4/S4: Apparently secure
- G5/S4: Secure

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 are also of high priority (CDFW 2024). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2024). Sensitive vegetation alliances and associations known or likely to occur within the program area occur within serpentine bunchgrass grassland, alkaline grassland, seasonal wetland, valley oak woodland, coastal and valley freshwater marsh, and sycamore alluvial woodland land cover types (CNDDB 2024, Holland 1986, Sawyer et al. 2009). Associations that occur most regularly in these habitats in the program area, and their rankings, are as follows:

- Coastal and valley freshwater marsh
  - 52.128.02 Schoenoplectus (acutus, californicus) – Typha (angustifolia, latifolia) (GNR-S3/S4)
  - 52.122.06 Schoenoplectus acutus – Xanthium strumarium (GNR-S3/S4)
  - 41.200.21 Distichlis spicata (Baccharis douglasii – Equisetum hymenale) (GNR/S4)
- Seasonal wetland
  - 52.500.04 Frankenia salina – Distichlis spicata (G4/S3)
  - 1.200.18 Distichlis spicata – Hordeum murinum (GNR/S4)
- Riparian (willow riparian forest and scrub, mixed riparian woodland and forest)
  - 61.205.04 Salix laevigata / Rosa californica (G4/S3)
  - 71.060.47 Quercus agrifolia / Salix lasiolepis (G3/S3)
  - 61.130.15 Populus fremontii – Salix laevigata (G4/S3)
- Central California sycamore alluvial woodland
  - 61.312.01 Platanus racemosa – Quercus agrifolia (G3/S3)
  - 61.313.02 Platanus racemosa / Toxicodendron diversilobum (G3/S3)
  - 74.100.13 Umbellularia californica – Platanus racemosa (G3/S3)

- Oak woodlands (valley oak woodland, mixed oak woodland and forest, coast live oak forest and woodland, blue oak woodland)
  - 71.040.22 Quercus lobata / Rubus ursinus – Rosa californica (G3/S3)
  - 71.040.06 Quercus lobata – Quercus agrifolia / grass (G3/S3)
  - 71.020.05 Quercus douglasii / Mixed herbaceous (G4/S4)
- Serpentine (serpentine rock outcrop/barrens, serpentine bunchgrass grassland)
  - 41.151.04 Nassella pulchra – Lolium perenne – Plantago erecta Serpentine (G3/G4 – S3/S4)
  - 44.108.03 Vulpia microstachys – Plantago erecta – Calycadenia (truncata, G2 S2? Y multiglandulosa) (G2/S2)
- Alkaline grassland
  - 44.119.06 *Hordeum* (*depressum*, *murinum* ssp. *leporinum*) (G2/S2)
  - 42.052.02 *Hordeum brachyantherum – Polypogon monspeliensis* (GNR/S4)

Serpentine bunchgrass grassland 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 (*Streptanthus albidus* ssp. *albidus*) 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 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 north of Alum Rock Park in San Jose and in the Pacheco Pass area.

Alkaline grasslands are often mesic and may support a relatively high proportion of native grass and forb species adapted to alkaline soils. These grasslands often occur in low-lying landscape positions where normal cycles of collection of surface water and evaporation increases soil salinity and alkalinity. Additionally, these habitats may also occur on moderately to strongly alkaline soils such as Clear Lake clays. The plant community in this habitat type tends to be include mesic-adapted grasses such as alkali barley (*Hordeum depressum*) and other barley species (*Hordeum* sp.), Italian ryegrass, and salt grass. In some areas, grass cover may be reduced in favor of forbs and subshrubs that prefer alkaline substrates, such as saltscales (*Atriplex* sp.), gumweed, alkali heath (*Frankenia salina*), alkali mallow (*Malvella leprosa*), and tarweeds (*Centromadia* sp.), among others. In other instances, harsh alkaline and/or saline affected soils may lead to a high proportion of bare ground. In the program area near San Felipe Lake along the Santa Clara Conduit, alkaline grassland supports occurrences of the rare CRPR San Joaquin spearscale.

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. In the program area near San Felipe Lake along the Santa Clara Conduit, seasonal wetland supports occurrences of rare CRPR species such as Hoover's button celery and prostrate navarretia.

Oak woodlands 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.

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. One study documented only 17 occurrences (comprising 2,032 acres) in the entire state of California (Keeler-Wolf et al. 1996). Sycamore alluvial woodland occurs sparsely in the program area, with the best examples of this community occurring along Pacheco Creek east of Gilroy.

Invasive Species and Pathogens

Invasive and Nonnative Nuisance Species

For over two centuries, humans have brought nonnative plants and animals into the program 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 (*Lepidium latifolium*) and giant reed are common in the program area. Additional common and widespread invasive plant species include yellow star-thistle (*Centaurea solstitialis*), eucalyptus, tree of heaven, 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 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.

Mosquitofish have been introduced throughout the world, including the program area, to control mosquito populations. Such introductions have been shown to have negative effects on amphibians in experimental studies, including decreased survival of larval Pacific treefrogs (Goodsell and Kats 1999) and California newts (*Taricha torosa*) (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).

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 2005). 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 2005). Biologists do not believe that the species can be eradicated once established (California Department of Fish and Game 2005). This species has been recorded at several locations in Santa Clara County since 2012, including along Matadero Creek, Saratoga Creek, Stevens Creek, Arroyo Hondo, Coyote Creek, Guadalupe River, Alamitos Creek, Guadalupe Creek, Arroyo Calero Creek, and at Vasona Reservoir (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 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 2008). Nonnative turtles, particularly the red-eared slider, have also been introduced in the program area, and these turtles compete with the native northwestern pond turtle for high-quality basking sites.

Nonnative mammal species such as feral house cats, red foxes, Norway rats, and muskrats (*Ondatra zibethicus*) are known to occur in the program 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 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 in human-disturbed areas 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 2014). Spread of contamination could result in long-term impairment of the health of native vegetation, resulting in declines in abundance of sensitive plant species and 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 can 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, 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 ordinances described under Section 3.3.2.

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 the 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.

The CNPS (2024) and CNDDB (2024) identify 78 special-status plant species as potentially occurring within one of the 15 USGS quadrangles in which the program area falls (for CNPS) or within 5 miles of the program area (for CNDDB) (Appendix G). For the purpose of this assessment, all 78 special-status plants were analyzed for their potential to occur in the program area.

Of the 78 potentially occurring special-status plant species (including List 4 species), the vast majority were determined to be absent from the program 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 project site, and/or (4) the project site is outside the species' known geographic range and/or there are no nearby extant records (Appendix G). All remaining special-status plants with the potential to occur in the program area are addressed in detail in Table 3.3-1 with the exception of CNPS List 4 species, which are only included in Table 3.3-1 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 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 area, or (5) populations exhibit unusual morphology or occur on unusual substrates. Two CNPS List 4 species meet the above criteria because of their restricted range: Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*) and Satan's goldenbush (*Isocoma menziesii* var. *diabolica*). The remaining List 4 species are listed in Appendix G.

Table 3.3-1 provides additional detail for 26 special-status plant species for which suitable habitat, edaphic requirements, and elevation range are present in the program area. Of these, 20 species are determined to be absent or likely absent from program work areas while nine special-status plant species are determined to potentially occur in program work areas, and can potentially be affected by program activities: Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Mt. Hamilton thistle (*Cirsium fontinale* var. *campylon*), Hoover's button-celery, spiny-sepaled button-celery, prostrate vernal pool navarretia, saline clover, San Joaquin spearscale, smooth lessingia, and Hall's bush-mallow. Areas supporting serpentine communities, including a number of special-status serpentine-associated plants, are shown on Figure 3.3-2. Figure 3.3-3 shows the mapped occurrences of non-serpentine-associated special-status plants in the program vicinity.

Table 3.3-1 Special-Status Plant Species with Potential to Occur in the Program Area

Common Name Scientific Name	Status	Habitat and Blooming Period	Potential for Occurrence in Program Area
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	**Absent.** Documented occurrences in the program area vicinity are present on Coyote Ridge between Anderson Reservoir and U.S. Highway 101. Suitable habitat in the surrounding vicinity includes serpentine bunchgrass grasslands on the northern portion of Coyote Ridge and portions of the Santa Teresa Hills. However, no program work areas are located within or very close to areas where this species is known or expected to occur. Determined to be absent.
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	**Absent.** 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. However, no program work areas are located within or very close to areas where this species is known or expected to occur. Determined to be absent.
Santa Clara Valley dudleya *(Dudleya setchellii*)	FE, CRPR 1B.1, VHP	Cismontane woodland, valley and foothill grassland on serpentinite, rocky/ serpentine rock outcrop	**Likely Absent.** Occurs in numerous locations in the program area vicinity 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. However, no program work areas are located within or very close to areas where this species is known or expected to occur. Should this species occur in the program area, it may be present on serpentine soils along the Cross Valley Pipeline and elsewhere.
Metcalf Canyon jewel-flower *(Streptanthus albidus* ssp. a*lbidus*)	FE, CRPR 1B.1, VHP	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	**Likely Absent.** The majority of the Metcalf Canyon jewel-flower's range occurs within the program area vicinity. 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, on Tulare Hill, and near Llagas Road in Morgan Hill. Potentially suitable habitat is present in the program area where serpentine grassland occurs. Should this species occur in the program area, it may be present on serpentine soils along pipelines such as the Cross Valley Pipeline and elsewhere.

Common Name Scientific Name	Status	Habitat and Blooming Period	Potential for Occurrence in Program Area
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	**Absent.** No populations are described as occurring in the program area vicinity. 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, as the range for this species tends to be outside the program area and program activities would mostly avoid serpentine habitat areas, this species is absent from program 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	**Likely Absent.** 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 vicinity 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, program activities would mostly avoid serpentine habitat areas and would not occur in areas where this species has been recorded. Therefore, this species is likely 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	**Likely Absent.** 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 area vicinity. Additional suitable habitat in the program area vicinity 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, program activities would mostly avoid serpentine habitat areas. Therefore, this species is likely 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	**May be Present.** Known to occur in Santa Clara County 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 the Milpitas Pipeline, southern areas of the Santa Clara Conduit, and South County Recycled Water Pipeline in the program area.

Common Name Scientific Name	Status	Habitat and Blooming Period	Potential for Occurrence in Program Area
Mt. Hamilton thistle *(Cirsium fontinale* var. *campylon*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland, and valley and foothill grassland in serpentinite seeps/ serpentine seeps	**May be Present.** Numerous recorded populations are present in the program area vicinity. 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 the Coyote Creek golf course, a drainage near Almaden Research Center, north of Calero Reservoir in a tributary to Arroyo Creek, and other locations. Suitable habitat is present 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. Pipelines along which this species potentially occurs are the Almaden Valley, Calero, and Cross Valley Pipelines.
Santa Clara red ribbons *(Clarkia concinna* ssp. *automixa*)	CRPR 4.3	Chaparral, cismontane woodland/ chaparral, oak woodland; slopes near drainages	**Absent.** 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 in chaparral and oak woodland habitats in the foothills of the Santa Cruz Mountains and the Diablo Range. However, no program activities are proposed near areas where this species potentially occurs. Determined to be absent.
San Francisco collinsia *(Collinsia multicolor*)	CRPR 1B.2	Closed-cone coniferous forest, coastal scrub, sometimes serpentinite	**Absent.** Within Santa Clara County, a known occurrence of this species is located within the program area vicinity on the shoreline of Anderson Reservoir, and this species was present, at least historically, in Almaden/Quicksilver County Park. However, no suitable habitat for this species is present within the program area. Determined to be absent.
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	**Likely Absent.** 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 vicinity, and the nearest potential habitat is located at higher elevations in the Diablo Range, in wet, boggy meadows, canyons, and chaparral openings. Due to the lack of known occurrences in the program area vicinity, this species is unlikely to occur along program pipelines. Should it occur in the program area, it may be present along the Pacheco Conduit or near the Pacheco Pumping Station.

Common Name Scientific Name	Status	Habitat and Blooming Period	Potential for Occurrence in Program Area
Hoover's button-celery *(Eryngium aristulatum* var. *hooveri*)	CRPR 1B.1	Vernal pools/California annual grassland habitat on alkaline soil, seasonal wetland	**Present.** Most 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 and within the footprint of the Santa Clara Conduit. Additional suitable habitat may be present in alkaline depressions, seasonal wetlands, or mesic roadside ditches in the vicinity of Gilroy and San Martin along the Santa Clara Conduit or South County Recycled Water Pipeline; however, due to the species' limited distribution in the program area vicinity, the likelihood that additional occurrences may be present in these areas is relatively low.
Spiny-sepaled button-celery *(Eryngium spinosepalum*)	CRPR 1B.2	Valley and foothill grassland, and vernal pools.	**May be Present.** This species occurs primarily in the central valley of California. There is one known occurrence near San Luis Reservoir in the program area vicinity, and it is also known to occur near San Felipe Lake. Should it occur in the program area, this species may be present along the Pacheco Conduit or near the Pacheco Pumping Station.
San Joaquin spearscale *(Extriplex joaquinana*)	CRPR 1B.2	Chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands in alkaline soils.	**Present.** Detected by Valley Water in many locations along the Santa Clara Conduit at San Felipe Lake, and could be present at similar locations along this pipeline's southern portion where there are alkaline and/or heavy clay soils. Species could also occur in similar habitats along the South County Recycled Water Pipeline.
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	**Likely Absent.** Known to occur on Coyote Ridge, south of Anderson Dam, at Coyote Valley Open Space Preserve, and at Almaden Quicksilver County Park. Additional suitable habitat occurs on serpentine soils in the program area. Should this species occur in the program area, it may be present along pipelines such as the Almaden Valley, Calero, Cross Valley, Penitencia Delivery Main, and Penitencia Force Main Pipelines.
Phlox-leaf serpentine bedstraw *(Galium andrewsii* ssp. *gatense*)		Chaparral, cismontane woodland, and lower montane coniferous forest.	**Likely Absent.** This species occurs in the California coast ranges, including in the Diablo range near the Ohlone Wilderness and Sunol Wilderness, in San Antonio Valley, and at Mount Hamilton. Small numbers are also present in the Santa Cruz mountains near New Almaden and Loma Prieta. Should this species occur in the program area, it may be present along thinner soils or transitional habitats near serpentine along the Calero, Cross Valley, Main Avenue, Penitencia Delivery Main, and Penitencia Force Main Pipelines.

Common Name Scientific Name	Status	Habitat and Blooming Period	Potential for Occurrence in Program Area
Loma Prieta hoita *(Hoita strobilina*)	CRPR 1B.1, VHP	Chaparral, cismontane woodland, riparian woodland, usually serpentinite/mesic mixed serpentine chaparral, serpentine seeps	**Likely Absent.** Numerous records are present in the program area vicinity 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. Should this species occur in the program area, it may be present along the Almaden Valley, Calero, and Cross Valley Pipelines.
Satan's goldenbush *(Isocoma menziesii* var. *diabolica*)	CRPR 4.2	Cismontane woodland/oak woodland	**Absent.** The species has only been documented in Santa Clara, San Benito, and Monterey Counties. It occurs in the program area vicinity 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 into foothill areas where this species is known to occur; rather, work activities would 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.
Legenere *(Legenere limosa*)	CRPR 1B.1	Vernal pools, seasonal wetlands	**Absent.** May occur in seasonal wetlands. Not widely known to occur in Santa Clara County, but one occurrence was detected by Valley Water staff on Palassou Ridge in Henry W. Coe State Park. While some marginally suitable wetland habitat occurs along the Santa Clara Conduit and South County Recycled Water Pipeline, prior surveys along these pipelines have failed to detect the high-quality seasonal wetland habitat most typical for the species. In addition, the most suitable habitat areas along these two pipelines are outside the known current range for the species.
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	**Absent.** Three records exist in the program area vicinity: one in the foothills west of Los Gatos, one in Sierra Azul Open Space Preserve, and one in an area north of Gilroy. Suitable habitat in the program area is present on serpentine soils in the foothills of the Santa Cruz Mountains, and such habitats would be avoided by program activities.

Common Name Scientific Name	Status	Habitat and Blooming Period	Potential for Occurrence in Program Area
Smooth lessingia *(Lessingia micradenia* var. *glabrata*)	CRPR 1B.2, VHP	Chaparral, cismontane woodland - on serpentinite, often roadsides/mixed serpentine chaparral and oak woodland	**May be Present.** In the program area vicinity, 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. This species can potentially occur on serpentine substrates such as along the Almaden Valley, Calero, Cross Valley, and South County Recycled Water Pipelines, as well as the Pacheco Conduit, Penitencia Delivery Main and Force Main, and Uvas-Llagas Transfer. While most serpentine-adapted species are expected to be absent from areas subject to program activities, this species is both tolerant of high levels of disturbance and may occur in large populations that encroach on transitional habitat near true serpentine.
Hall's bush-mallow *(Malacothamnus hallii*)	CRPR 1B.2, VHP*	Chaparral, coastal scrub/chaparral	**May be Present.** Numerous records of the species exist in the program area vicinity 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. This species is known to occur along the Cross Valley Pipeline, and some potential exists for the species to occur in or near program work sites such as those along the Almaden Valley and Calero Pipelines; along the Anderson Force Main and Pacheco Conduit; or near the Pacheco Pumping Station.
Woodland woollythreads *(Monolopia gracilens*)	CRPR 1B.2, VHP*	Grasslands or open areas in chaparral, coastal scrub, cismontane woodland, and North Coast coniferous forest, sometimes on serpentinite	**Likely Absent.** Occurs in the program area vicinity 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 can potentially occur on serpentinite substrates near program work locations, and can potentially be present along the Pacheco Conduit, Almaden Valley, Calero, Cross Valley, and South County Recycled Water Pipelines, as well as the Anderson Force Main. Areas subject to program activities likely do not have suitable habitat conditions to support this species.
Prostrate vernal pool navarretia *(Navarretia prostrata)*	CNPS 1B.2	Vernal pools, seeps, valley and foothill grassland	**Present.** Present within the program area vicinity at San Felipe Lake, and may be present within program work areas in seasonal wetlands along the Santa Clara Conduit and South County Recycled Water Pipeline.

Common Name Scientific Name	Status	Habitat and Blooming Period	Potential for Occurrence in Program Area
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	**Likely Absent.** Occurs in the program area vicinity 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 marginally suitable habitat in the program area such as along the Almaden Valley, Cross Valley, and South County Recycled Water Pipelines, as well as the Campbell Distributary, although areas of sufficient serpentine influence to be considered fully suitable habitat are expected to be avoided by program activities.
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; occurs in both coastal and inland marshes	**May be Present.** Present within the program area vicinity very close to the program area at San Felipe Lake. May be present in mesic-alkaline soils in marshes and swamps, as well as in grasslands, along the Milpitas and South County Recycled Water Pipelines, as well as along the Santa Clara Conduit.

Notes:

[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;

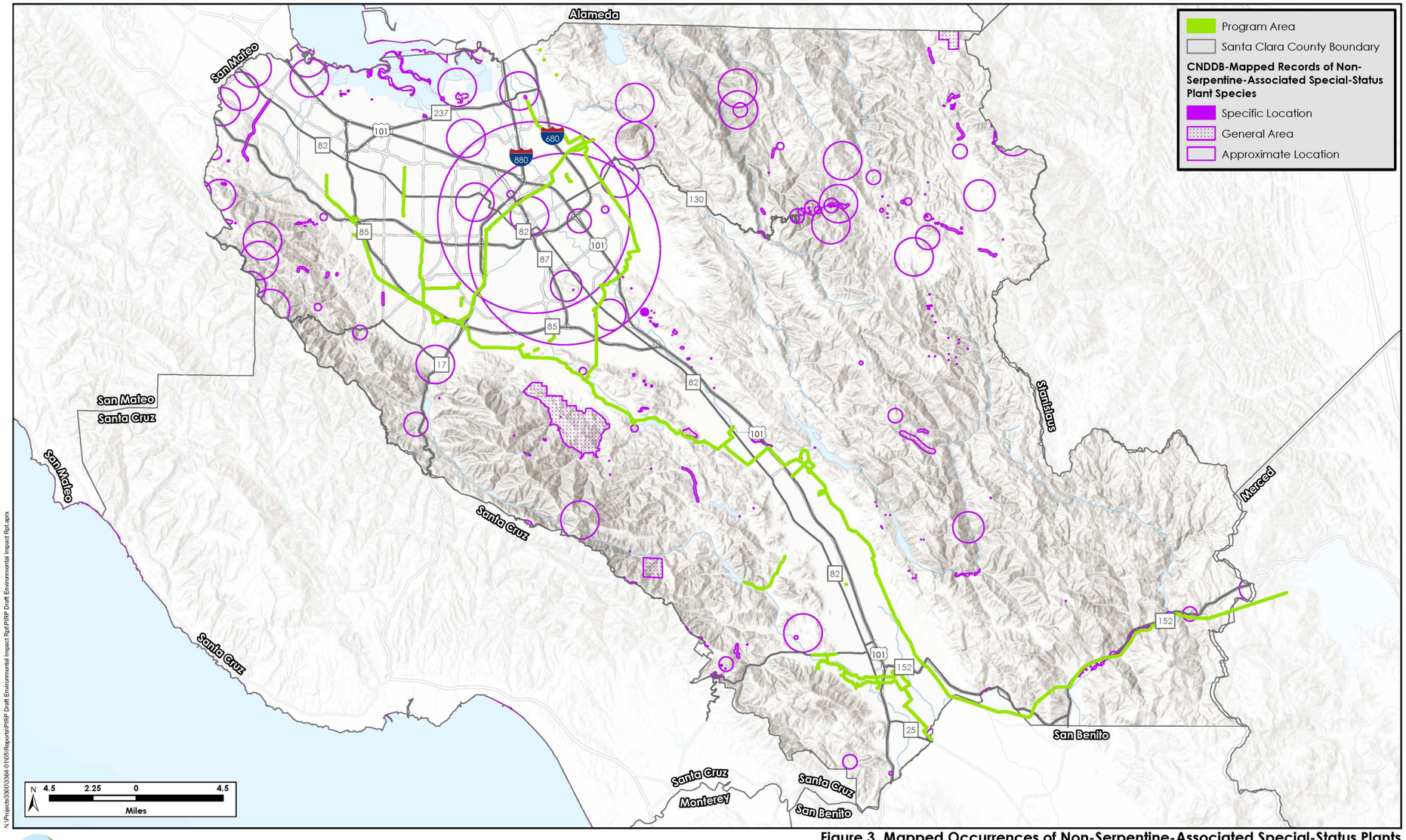
.3—not very endangered in California.

[3] VHP Species covered under the VHP

VHP* Species proposed for coverage under the VHP amendment

Sources: CNDDB 2024, CNPS 2024, and Calflora 2024

Figure 3.3-3 Mapped Occurrences of Non-Serpentine Associated Special-Status Plants



H. T. HARVEY & ASSOCIATES
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Figure 3. Mapped Occurrences of Non-Serpentine-Associated Special-Status Plants
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
December 2023

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).

The legal status and likelihood of occurrence within the program area of special-status animal species known to occur or potentially occurring in the surrounding region are presented in Table 3.3-2.

Several special-status animal species historically occurred in the program area vicinity, but are not expected to be present in the program area currently, as explained below. These include the following, which are not 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 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 (CDFW 2023), and there are no recent records from Santa Clara County or nearby areas (CDFW 2019, Bumble Bee Watch 2024, CDFW 2024, iNaturalist 2024). Therefore, this species is absent from the program area.
- The Central California Coast coho salmon (*Oncorhynchus kisutch*) was anecdotally reported in Coyote Creek, and possibly in the Guadalupe River and Los Gatos Creek. 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 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 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 area vicinity, but no recent records exist. This species has been displaced by development or disturbed by agriculture in much of the program 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 area.
- The southern edge of the Alameda whipsnake's (*Maxticophis 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. The most recent extant CNDDB occurrences (from 2014 to 2017) are located east of Calaveras Reservoir outside the program area (CNDDB 2024). Thus, this species is determined to be absent from the program 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 area vicinity, 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 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 Alameda song sparrow (*Melospiza melodia pusillula*) is endemic to Central and South San Francisco Bay. This species occurs in the taller vegetation found along tidal sloughs, including salt marsh cordgrass and marsh gumplant, near the South Bay. No program area pipelines are located within the distribution of this species in Santa Clara County; thus, all individuals in the program area are of the race breeding in freshwater riparian habitats (*gouldii*).
- The state and federally endangered California Ridgway's rail (*Rallus obsoletus obsoletus*) 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 threatened California black rail (*Laterallus jamaicensis coturniculus*) also nests and winters in tidal brackish and salt marshes in small numbers. However, no program area pipelines are located within suitable tidal habitats to support these species.
- 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. No program area pipelines are located within suitable habitats to support this species.

Several bird species that are considered California species of special concern only when nesting occur in the program area vicinity as non-breeding transients, foragers, or migrants, and have never been recorded breeding in or very close to the program area. These include the purple martin (*Progne subis*) and olive-sided flycatcher (*Contopus cooperi*). Because they are only considered species of special concern when nesting, they are not special-status species when they occur as non-breeding visitors to the program area, and they are not included in Table 3.3-2.

Two bird species that are state or federally listed, and consequently are considered special-status species year-round, also occasionally occur in the program area vicinity as non-breeding 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 area vicinity. These are the state and federally endangered California condor (*Gymnogyps californianus*) and state threatened bank swallow (*Riparia riparia*). Although they occur in the program area vicinity only infrequently and/or in small numbers, they are discussed in further detail in Table 3.3-2 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 area vicinity were from the state-listed California breeding populations; however, the probability that any California-breeding willow flycatchers migrate through the program area vicinity is extremely low given the scarcity of the species as a breeder in California (as opposed to areas farther north) north of the program area.

Additional special-status animal species are addressed in greater detail in Table 3.3-2 below because they (1) are known to breed or could potentially breed in the program area, (2) occur fairly commonly as non-breeders in the program area (and thus could potentially be substantially affected by activities that occur under the program), (3) are described in the VHP as potentially occurring in the program area, and/or (4) are of particular concern to regulatory agencies. These are the Bay checkerspot butterfly, large marble butterfly (*Euchloe ausonides ausonides*), monarch butterfly (*Danaus plexippus*), Crotch's bumble bee (*Bombus crotchii*) (if the species is listed under CESA), California tiger salamander, California red-legged frog, foothill yellow-legged frog (*Rana boylii*), northwestern pond turtle, coast horned lizard (*Phrynosoma blainvillii*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), white-tailed kite, Swainson's hawk (*Buteo swainsoni*), northern harrier, burrowing owl, loggerhead shrike, least Bell's vireo (*Vireo bellii pusillus*), grasshopper sparrow, tricolored blackbird (*Agelaius tricolor*), yellow-breasted chat (*Icteria virens*), yellow warbler, San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), San Francisco dusky-footed woodrat, San Joaquin kit fox (*Vulpes macrotis mutica*), ringtail (*Bassariscus astutus*), American badger, Central Coast Evolutionarily Significant Unit of the mountain lion (*Puma concolor*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western red bat.

Table 3.3-2 Special-Status Animal Species with Potential to Occur in the Program Area

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
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 spp.	**May be Present**. Occurs within the program area vicinity 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. May be present along pipelines that extend within and adjacent to these habitats, including the Cross Valley and Calero Pipelines (Figure 3.3-2). Designated critical habitat is present along or very close to the Cross Valley and Calero Pipelines.
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.** Occurs widely as a resident in the program area vicinity, nectaring on flowering plants. Mustards are widespread 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 in urban areas is expected to be much less frequent compared to more natural areas.
Monarch butterfly *(Danaus plexippus)*	FC, VHP*	Larval host plants are typically milkweeds (*Asclepias* spp.); nectars on a variety of flowering plants	**Present**. Occurs widely as an uncommon migrant, nectaring on flowering plants. Narrow-leaf milkweed (Asclepias fascicularis) is present in scattered patches throughout the program area vicinity, and low numbers of monarch butterflies breed on this hostplant. 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. May be present along pipelines that extend through vegetated areas, including natural areas and urban areas with landscaping vegetation.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
Crotch's bumble bee *(Bombus crotchii)*	SC, VHP*	Open grassland and scrub habitats	**May be Present.** Concern over possible population declines and range contractions led this species to be designated as a candidate for listing under CESA in 2019 (CDFW 2019). However, since 2019, there have been documented occurrences of 80-90 individuals from approximately 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 in the county. This species likely occurs in grassland and scrub habitat throughout much of the program area vicinity in low densities, and it may occur along pipelines located within or near extensive grasslands or scrub. Occurrence along urban pipeline segments is expected to be much less frequent.
Central California Coast steelhead *(Oncorhynchus mykiss)*	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Present.** In the program area vicinity, Central California Coast steelhead are known to occur in, and suitable spawning habitat is present in, Coyote Creek, Upper Penitencia Creek, Los Gatos Creek, Alamitos Creek, Calero Creek, Guadalupe Creek, Stevens Creek, San Francisquito Creek, and the Guadalupe River (Leidy et al. 2003) (Figure 3.3-4). Critical habitat for the species has been designated along some of these streams. Steelhead potentially can spawn in virtually any reach of streams in the program area that offer suitable spawning habitat and lack downstream barriers to dispersal. This species likely occurs along pipelines that cross accessible portions of streams in the program area, especially during migration between the ocean and upstream spawning and rearing areas.
South-Central California Coast Steelhead *(Oncorhynchus mykiss)*	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Present.** In the program area vicinity, the South-Central California Coast steelhead is known to occur along several streams in the Pajaro River watershed (Figure 3.3-4). Critical habitat for the species has been designated along some of these streams. Populations are known to occur in Uvas and Llagas creeks. This species likely occurs along portions of the Pacheco Conduit, Santa Clara Conduit, South County Recycled Water Pipeline, and Uvas-Llagas Transfer that cross accessible portions of these streams in the program area, especially during migration between the ocean and upstream spawning and rearing areas.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
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	**May be Present.** Historically may have occurred throughout the program area vicinity; however, populations located along the Valley floor have been extirpated because of urbanization. Recent occurrences are scattered 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. May be present along pipelines that extend through natural areas on the periphery of the program area, including the Almaden Valley, Cross Valley, and Calero Pipelines, Santa Clara Conduit, and Pacheco Conduit, or near the Pacheco Pumping Station (Figure 3.3-5). Designated critical habitat is present along the Almaden Valley Pipeline, Calero Pipeline, and Santa Clara Conduit.
California red-legged frog *(Rana draytonii)*	FT, CSSC, VHP	Streams, freshwater pools, and ponds with emergent or overhanging vegetation	**May be Present.** 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 vicinity, 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 (Figure 3.3-6). May be present along pipelines that extend through natural areas on the periphery of the program area, including the Cross Valley and Calero Pipelines as well as the Santa Clara and Pacheco Conduits, and near the Pacheco Pumping Station (Figure 3.3-6). Designated critical habitat is present along the Santa Clara and Pacheco Conduits and at the Pacheco Pumping Station.
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 instream impoundments. Occurs in a variety of habitats in coast ranges.	**Unlikely to Occur.** In the program area, this species has disappeared from streams below major reservoirs (Figure 3.3-7). Populations of foothill yellow-legged frogs are still present along the upper reaches of some streams above major reservoirs, including perennial and intermittent streams, but are absent from the majority of the program area itself, including all portions of the program area located in Merced County, San Benito County, and outside of the current VHP permit area in Santa Clara County.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
Northwestern pond turtle *(Actinemys marmorata*)	FP, VHP	Permanent or intermittent/seasonal water in a variety of habitats	**Present.** Occurs in a number of aquatic habitats in the program area vicinity, including a number of perennial and intermittent creeks, rivers, lakes, and ponds (CNDDB 2024, H. T. Harvey & Associates 2012a) (Figure 3.3-8). Breeding populations of northwestern pond turtles have likely been extirpated from many urbanized areas in the region. However, individuals of this long-lived species still occur in urban streams and ponds in the program area. Potentially suitable nesting habitat for northwestern pond turtles is present in areas adjacent to suitable streams and ponds in the program area. Individuals can potentially occur along pipelines in the program area that cross stream habitats or that are located near suitable ponds.
Bank swallow *(Riparia riparia*)	ST	Colonial nester on vertical banks or cliffs with fine-textured soils near water	**May be Seasonally Present as Nonbreeder.** No recent breeding records from Santa Clara County. Occurs in the program area vicinity 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	**May be Present as Nonbreeder.** Known to occur in the program area vicinity 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 at ground level in the areas where program activities would occur. The potential for individuals to occur on the ground as foragers would be limited to portions of pipelines that pass through open habitats on the periphery of the program area.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
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.** Numbers of bald eagles have been increasing in the program area vicinity in recent years, and at least 10 pairs currently nest here. This species has recently nested at Coyote Reservoir, Anderson Reservoir, Lexington Reservoir, Calero Reservoir, San Felipe Lake, the Ogier Ponds, Pacheco Creek, Curtner Elementary School in Milpitas, Felt Lake, San Luis Reservoir, and other locations. A nest occupied in 2023 was located at the junction of the Calero and Almaden Valley pipelines below Calero Dam, and another was close to the Pacheco Conduit along Pacheco Creek. Small numbers of nonbreeding bald eagles also forage throughout the program area vicinity, primarily at large reservoirs, during winter and migration. Individuals can potentially nest and forage along the Almaden Valley Pipeline, Anderson Force Main, Calero Pipeline, Santa Clara Conduit, and Pacheco Conduit, which pass near major reservoirs or streams, or near the Pacheco Pumping Station, located near San Luis Reservoir, where the species is known to, or could potentially, nest.
Swainson's hawk *(Buteo swainsoni)*	ST, VHP*	Nests in trees surrounded by extensive marshland or agricultural foraging habitat	**Seasonally Present.** 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 2018 through 2023 (Klein et al. 2022). This latter pair has nested near the Santa Clara Conduit. This species' population/range expansion has been more pronounced in San Benito County to the south in comparison to Santa Clara County, and the species has also been known to nest near the Santa Clara Conduit in San Benito County. Additional nesting pairs are expected to occur in the program area vicinity in future years as the species' population continues to increase. This species could therefore also nest in the future along the Calero and Cross Valley Pipelines, the Cross Valley Extension, the South County Recycled Water Pipeline, and the Pacheco Conduit. Small numbers of nonbreeding individuals forage in open habitats elsewhere in the program area vicinity during migration.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
Least Bell's vireo *(Vireo bellii pusillus*)	FE, SE, VHP	Nests in heterogeneous riparian habitat, often dominated by cottonwoods and willows	**Unlikely to Occur.** The only breeding records in the program area vicinity 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 vicinity. Although least Bell's vireos may increase in number and distribution in the program area vicinity as core populations increase, it is unlikely to be more than a rare and very locally occurring breeder along South County streams. Individuals can potentially occur along portions of the Pacheco Conduit, Santa Clara Conduit, and South County Recycled Water Pipeline that cross or are close to Pacheco Creek, Llagas Creek, and Uvas-Carnadero Creek (Figure 3.3-9).
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.	**May be Present.** Typically nests in extensive stands of tall emergent herbaceous vegetation in freshwater marshes, ponds, and reservoirs. In the program area vicinity, 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 vicinity. This species can potentially nest along a number of pipelines that pass through or near suitable habitat, including the Almaden Valley and Calero Pipelines as well as the Santa Clara Conduit and Pacheco Conduit.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
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.	**May be Present as Nonbreeder.** Within the program area vicinity, 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 vicinity 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 along pipelines that pass through these areas, such as the Cross Valley and Calero Pipelines as well as the Santa Clara Conduit, Santa Clara Tunnel, and Pacheco Conduit periodically and in low numbers. However, mountain lions are not expected to den or breed along or near the program area 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	**Unlikely to Occur.** 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. Within these areas, individuals may occur along the Santa Clara Conduit, Santa Clara Tunnel, and Pacheco Conduit, as well as near the Pacheco Pumping Station. 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.
California Species of Special Concerns			
Central Valley fall-run Chinook salmon *(Oncorhynchus tschawytscha)*	CSSC	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	**Seasonally Present**. Fall-run Chinook salmon occur in Coyote Creek, Los Gatos Creek, Guadalupe Creek, Alamitos Creek, Calero Creek, and the Guadalupe River in the program area (Leidy et al. 2003). Individuals may be seasonally present along pipelines in the program area that intersect streams providing suitable habitat and that drain to the San Francisco Bay, such as the Central Pipeline and Snell Pipeline.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
Pacific lamprey *(Entosphenus tridentatus)*	CSSC	Medium- and large-sized, low-gradient cold rivers and streams, with a wide range of habitats (e.g., gravel, low-gradient riffles).	**Present.** Historically, this species may have been present in streams throughout the program area vicinity. Currently known from the Guadalupe River; San Francisquito, Coyote, Upper Penitencia, Lower Silver, Guadalupe, Alamitos, Stevens, and Uvas creeks, and may be locally common in these areas (Leidy 2007, Valley Water fish sampling and relocation data 2002–2009). May be present along portions of a number of pipelines in the program area that intersect accessible portions of streams, especially during migration between spawning areas and marine foraging habitat.
Riffle sculpin *(Cottus gulosus)*	CSSC	Permanent, cool, headwater streams with an abundance of riffles and rocky substrates.	**Present**. This species is known to be present in Uvas Creek and its tributaries, Guadalupe Creek, Coyote Creek (upstream of the reservoirs), and Upper Penitencia Creek. This species has also been reported in the Guadalupe River. Individuals can potentially occur along portions of a number of pipelines that intersect suitable perennial and intermittent streams that have connectivity to upper watershed areas.
Sacramento hitch *(Lavinia exilicauda exilicauda)*	CSSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes, and reservoirs. Has a high tolerance for varying stream conditions and water temperature.	**Present**. This species is known to occur widely in aquatic habitats that drain to the San Francisco Bay, including in unshaded pools with warm temperatures, in the program area vicinity, and is expected to occur along pipelines that intersect perennial and intermittent streams or ponds supporting aquatic habitat and pools.
Monterey hitch *(Lavinia exilicauda harengus)*	CSSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes, and reservoirs.	**Present.** This species is known to occur widely in aquatic habitats that drain to the Monterey Bay, including in unshaded pools with warm temperatures, in the program area vicinity, and is expected to occur along pipelines that intersect perennial and intermittent streams or ponds supporting aquatic habitat and pools.
Southern coastal roach *(Hesperoleucus venustus subditus)*	CSSC	Generally found in small streams, they are well-adapted to intermittent watercourses (e.g., tolerant of high temperatures and low oxygen levels).	**Present**. This species is known to occur widely in aquatic habitats that drain to the San Francisco and Monterey bays, including in unshaded pools with warm temperatures, in the program area vicinity, and is expected to occur along pipelines that intersect perennial and intermittent streams or ponds supporting aquatic habitat and pools.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
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)	**Unlikely to Occur.** In the program area vicinity, 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 vicinity only near Calero Reservoir in Santa Clara County and the Pacheco Pumping Station in Merced County (CNDDB 2024). Likely restricted to a few locations in the program area along the Calero Pipeline and near the Pacheco Pumping Station.
Vaux's swift *(Chaetura vauxi)*	CSSC (nesting)	Nests in snags in coastal coniferous forests or, occasionally, in chimneys; forages aerially	**Seasonally Present**. In the South Bay, nests primarily in snags in forests of the Santa Cruz Mountains, but 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 area. Forages aerially over these areas during the breeding season, and anywhere over the larger program area and its vicinity during migration.
Least bittern *(Ixobrychus exilis)*	CSSC (nesting)	Nests and forages in freshwater marshes	**Unlikely to Occur.** Historically a very rare nonbreeding visitor to the program area vicinity, but a pair of least bitterns was documented nesting at Calero Reservoir in 2022 (Cornell Lab of Ornithology 2024). Small numbers of individuals may continue to nest at Calero Reservoir or elsewhere in the program area vicinity (e.g., near San Feipe Lake) where suitable habitat is present. However, the species is unlikely to nest in areas where program activities are projected.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
Northern harrier *(Circus cyaneus)*	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas	**Present**. Within the program area vicinity, potential nesting habitat is present primarily 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, as well as near San Felipe Lake. The species is known to nest near program work areas along the Santa Clara Conduit and South County Recycled Water Pipeline where suitable habitat is present. Nonbreeding individuals forage regularly in grassland, agricultural, and wetland habitats throughout the program area vicinity, and can occur in high densities in some years (e.g., during vole outbreaks).
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.** Present year-round in the program area vicinity in open, agricultural, and grassland areas where active ground squirrel burrows are present. However, this species has undergone a substantial decline in the region. Although small numbers may breed in San Benito County in the vicinity of the Calaveras Fault Inlet/Outlet, there are no other known breeding populations present in the program area. 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, and can potentially occur along a number of pipelines in this area. A small possibility exists that small numbers of burrowing owls could breed in the future along the Pacheco Conduit, Santa Clara Conduit, and/or South County Recycled Water Pipeline, or near the Pacheco Pumping Station.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
Loggerhead shrike *(Lanius ludovicianus)*	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats	**Present.** 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 vicinity (Cornell Lab of Ornithology 2024), and nesting pairs may be present along the Pacheco Conduit, Santa Clara Conduit, Santa Clara Tunnel, and South County Recycled Water Pipeline, and near the Pacheco Pumping Station. Occasional individuals are also periodically observed during the nesting season in open habitats in the Coyote Valley and Morgan Hill areas, and small numbers may still breed along pipelines in those areas as well. Occurs slightly more widely (i.e., in smaller patches of open areas providing foraging habitat) during the non-breeding season.
Yellow warbler *(Setophaga petechia)*	CSSC (nesting)	Nests in riparian woodlands	**Present.** Uncommon breeder in wooded riparian habitats in the program area vicinity. Prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007a), particularly in areas with more open space adjacent to the riparian habitat (rather than in heavily developed areas). May nest along a number of pipelines in the program area that intersect suitable riparian habitat. 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	**May be Present**. 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 3.3-10). The greatest proportion of breeding records of sinuosa in the program area vicinity 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 2007b). 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. Pipelines that could possibly intersect suitable nesting habitat within the breeding distribution of this species in the program area are the Hetch-Hetchy Intertie and Milpitas Pipeline.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
Yellow-breasted chat *(Icteria virens)*	CSSC (nesting)	Nests in dense stands of willow and other riparian habitat	**May be Seasonally Present**. Rare breeder, and only slightly more regular transient, in willow-dominated riparian habitats in the program area vicinity. Historically, it likely bred more widely the program area vicinity, 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. Pipelines that intersect suitable nesting habitat for this species are the Pacheco Conduit, Santa Clara Conduit, and South County Recycled Water Pipeline. The species occurs as a very scarce migrant throughout the program area vicinity during the spring and fall.
Grasshopper sparrow *(Ammodramus savannarum)*	CSSC (nesting)	Breeds and forages in grasslands, meadows, fallow fields, and pastures	**May be Present**. Nests in extensive grasslands with some heterogeneity, including serpentine grasslands. In the program area vicinity, 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 vicinity, 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 the Calero and Cross Valley Pipelines, as well as near the Pacheco Pumping Station. This species occurs in low numbers in grasslands throughout the program area vicinity during migration and winter (Cornell Lab of Ornithology 2024).
Pallid bat *(Antrozous pallidus)*	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees	**May be Present.** Historically, may be present in a number of locations throughout the program area vicinity, but this species has declined in recent decades. Known maternity colonies in the program area vicinity occur at several locations. Suitable roosting sites are present along a number of pipelines in the program area that are located in or near open space or less developed areas, 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.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
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	**Absent as Breeder.** 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 buildings 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 and Morgan Hill, and near Calero Reservoir. Potentially suitable buildings to support roosting by this species are present along the Cross Valley Pipeline and Extension, South County Recycled Water Pipeline, and Uvas-Llagas Transfer.
Western red bat *(Lasiurus blossevillii)*	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat	**Absent as Breeder.** Individual western red bats occur 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. Suitable roosting habitat for this species is identified in the program area where pipelines cross streams with mature riparian trees.
San Francisco dusky-footed woodrat *(Neotoma fuscipes annectens)*	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub	**May be Present.** 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. Individuals may be present along pipelines throughout the program area that pass through suitable riparian, oak woodland, and/or scrub habitats.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
American badger *(Taxidea taxus)*	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas	**May be Present.** Known to occur in the program area vicinity primarily in grasslands and less frequently disturbed agricultural habitats, mostly in the foothills but sometimes on the Valley floor, and individuals can potentially occur along a number of pipelines that pass through these areas. The majority of occurrences in the program area vicinity 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	**May be Present.** 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 near the program area (Bousman 2007c), and can potentially breed and occur along a number of pipelines within these areas. The species has nested near the Almaden Valley Pipeline. Forages somewhat more widely, especially during the nonbreeding season, in agricultural/open space areas on the Valley floor, such as in Coyote Valley and in the Pajaro River watershed.
White-tailed kite *(Elanus leucurus)*	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats	**Present.** A fairly common breeder along Llagas and Uvas/Carnadero Creeks and the Pajaro River. 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. Pairs of kites can potentially breed and occur along a number of pipelines within these areas. Occurs as a common forager in open habitats throughout the program area vicinity during the nonbreeding season.

Common Name Scientific Name	Status	Habitat	Potential for Occurrence in Program Area
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	**Unlikely to Occur**. Few confirmed records exist in the program area vicinity. 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. The only pipeline supporting potentially suitable habitat in the program area is the Pacheco Conduit, and the species can also potentially occur near the Pacheco Pumping Station. However, given the very low numbers of detections, this species is likely very scarce and localized in occurrence in the vicinity, and it is likely absent from the program area.

Notes:
Federal and State Endangered and Threatened Status Definitions:

Federal

FE	Endangered under FESA
FT	Threatened under FESA
FC	Candidate for listing under FESA

State

SE	Endangered under CESA
ST	Threatened under CESA
SC	Candidate for listing under CESA
CSSC	California Species of Special Concern
SP	Designated as fully protected

VHP

VHP	Species covered under the VHP
VHP*	Species proposed for coverage under the VHP amendment

Figure 3.3-4 Steelhead Distribution in the Program Area

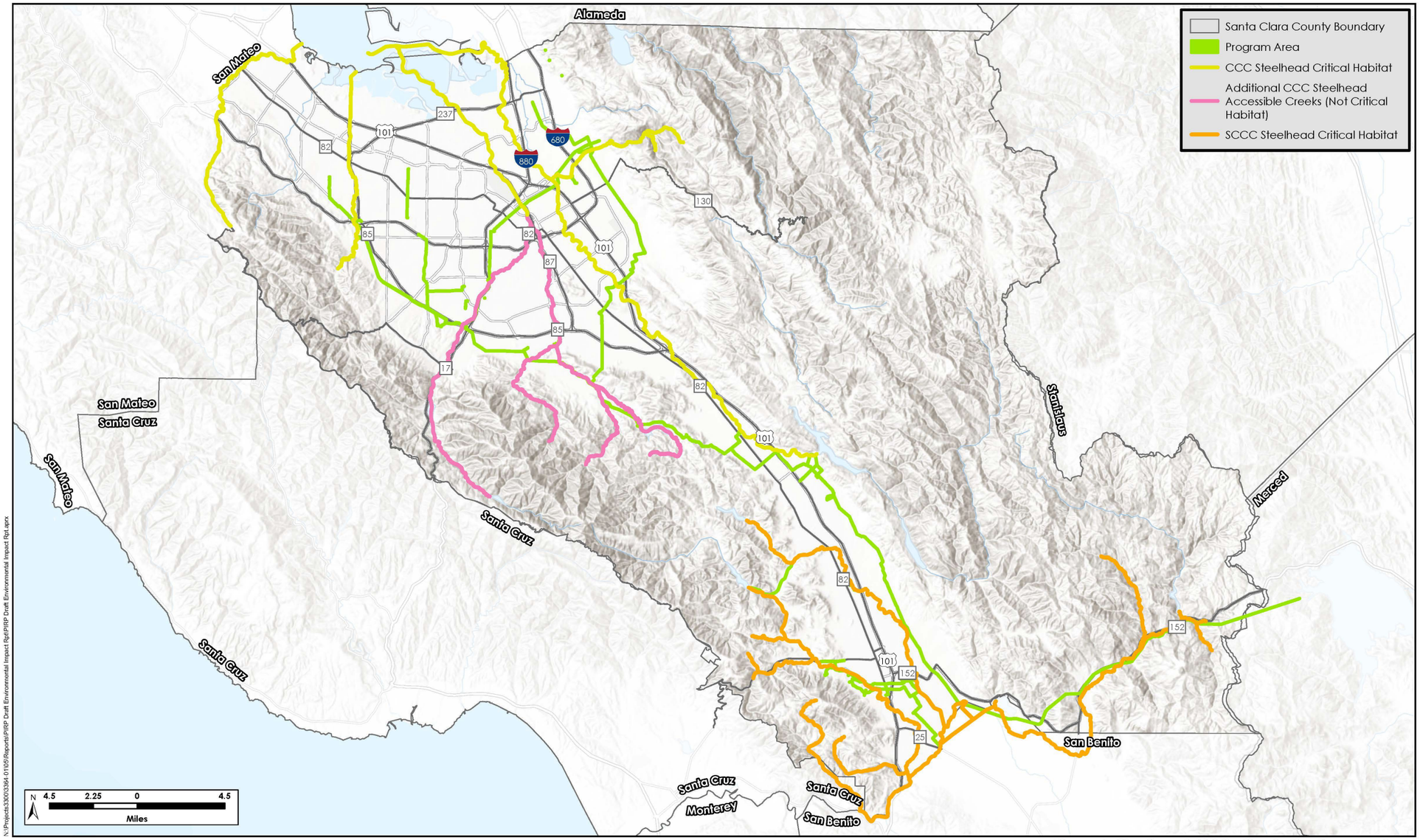

Figure 4. Steelhead Distribution in the Program Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
December 2023

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Figure 3.3-5 California Tiger Salamander Distribution in the Program Area

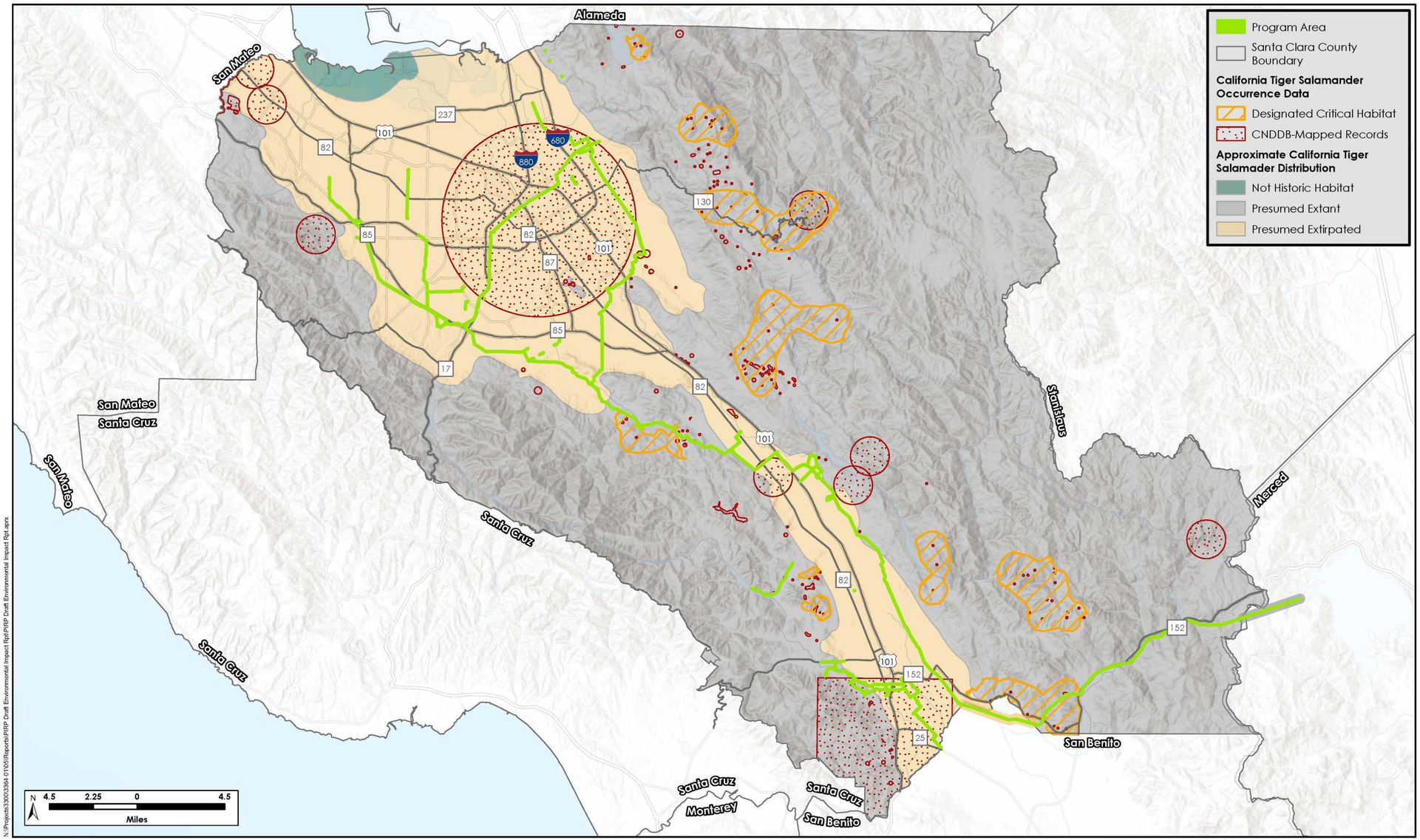

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Figure 5. California Tiger Salamander Distribution in the Program Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
December 2023

Figure 3.3-6 California Red-Legged Frog Distribution in the Program Area

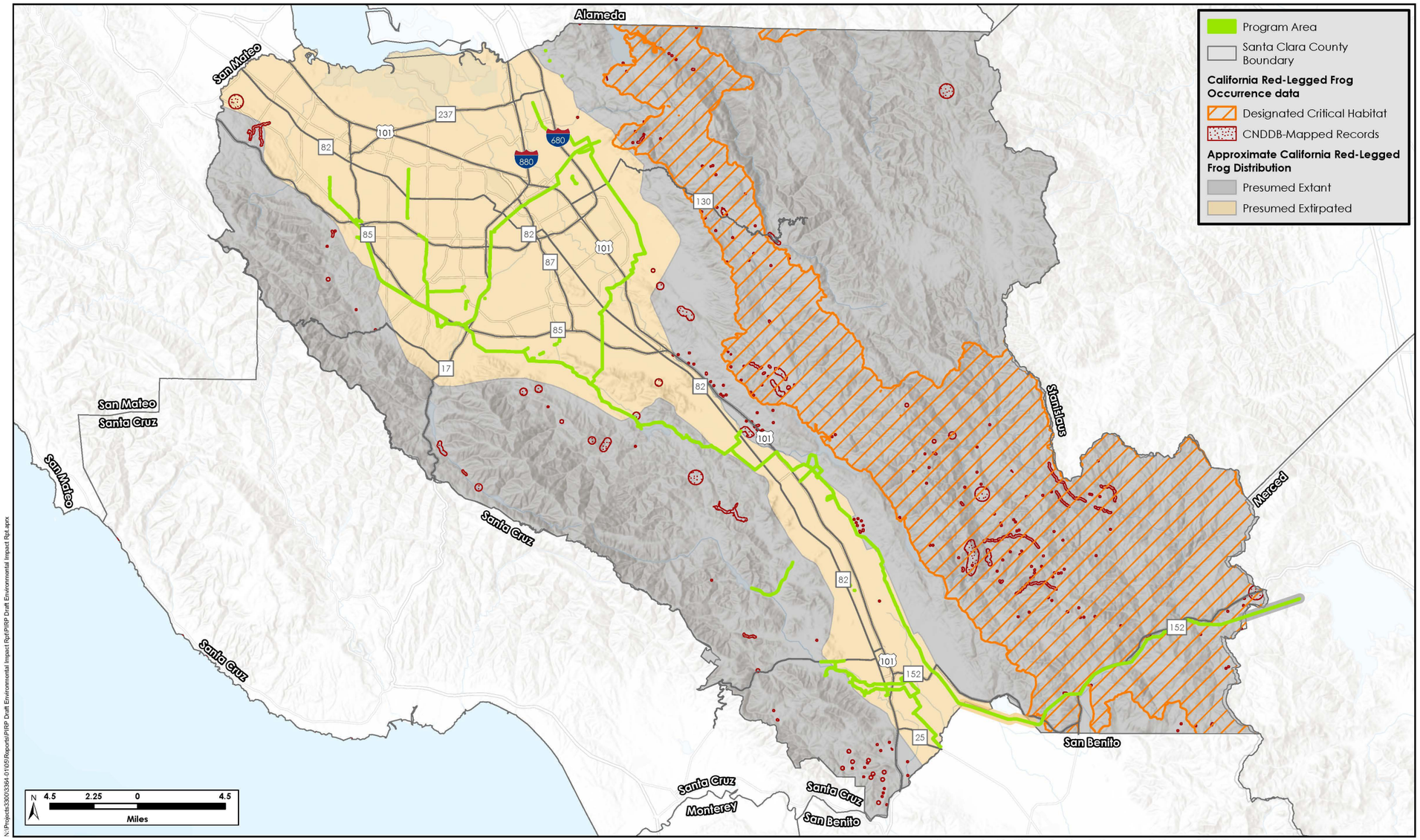

Figure 6. California Red-Legged Frog Distribution in the Program Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
December 2023

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Figure 3.3-7 Foothill Yellow-Legged Frog Distribution in the Program area

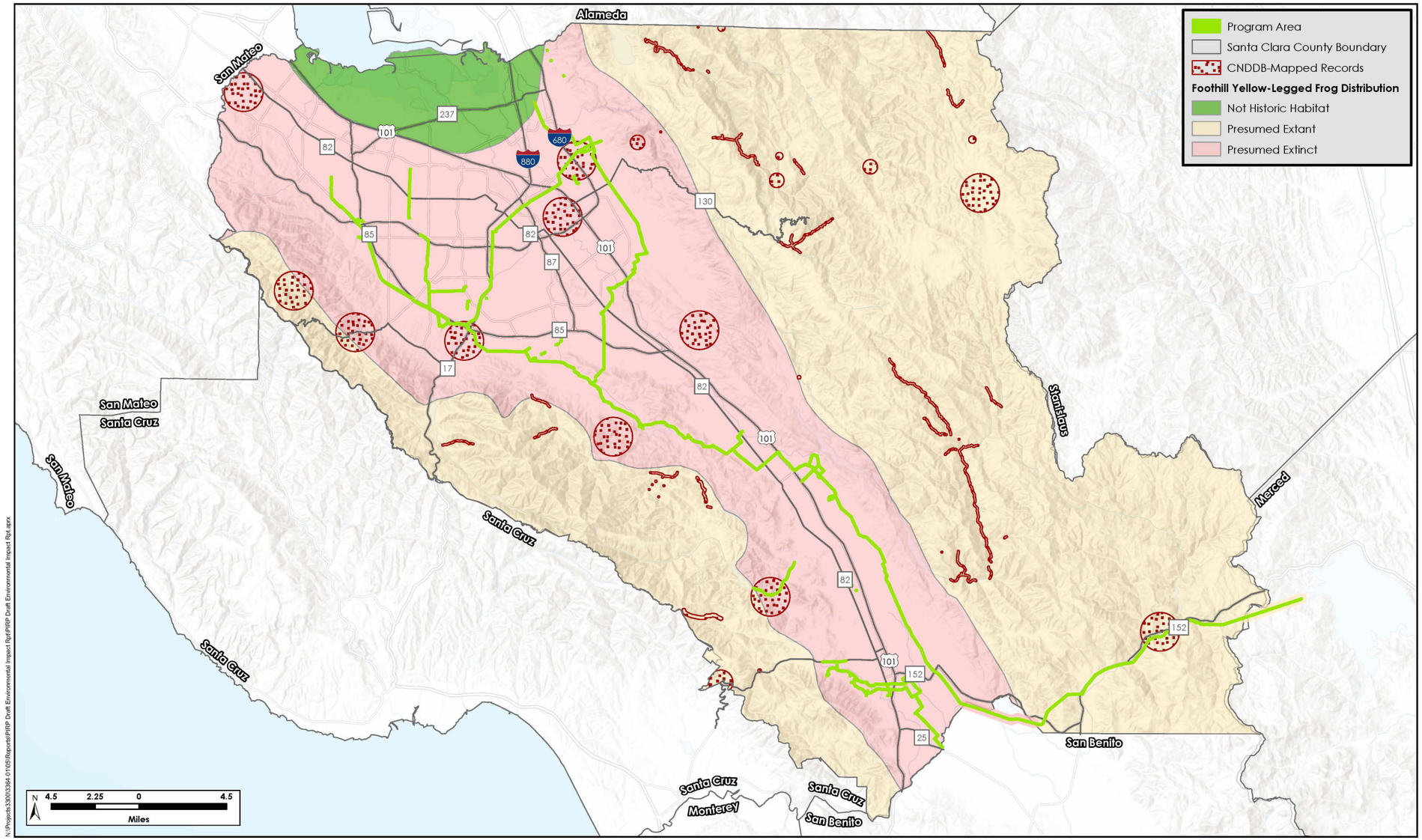

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Figure 7. Foothill Yellow-Legged Frog Distribution in the Program Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
December 2023

Figure 3.3-8 Northwestern Pond Turtle Distribution in the Program Area

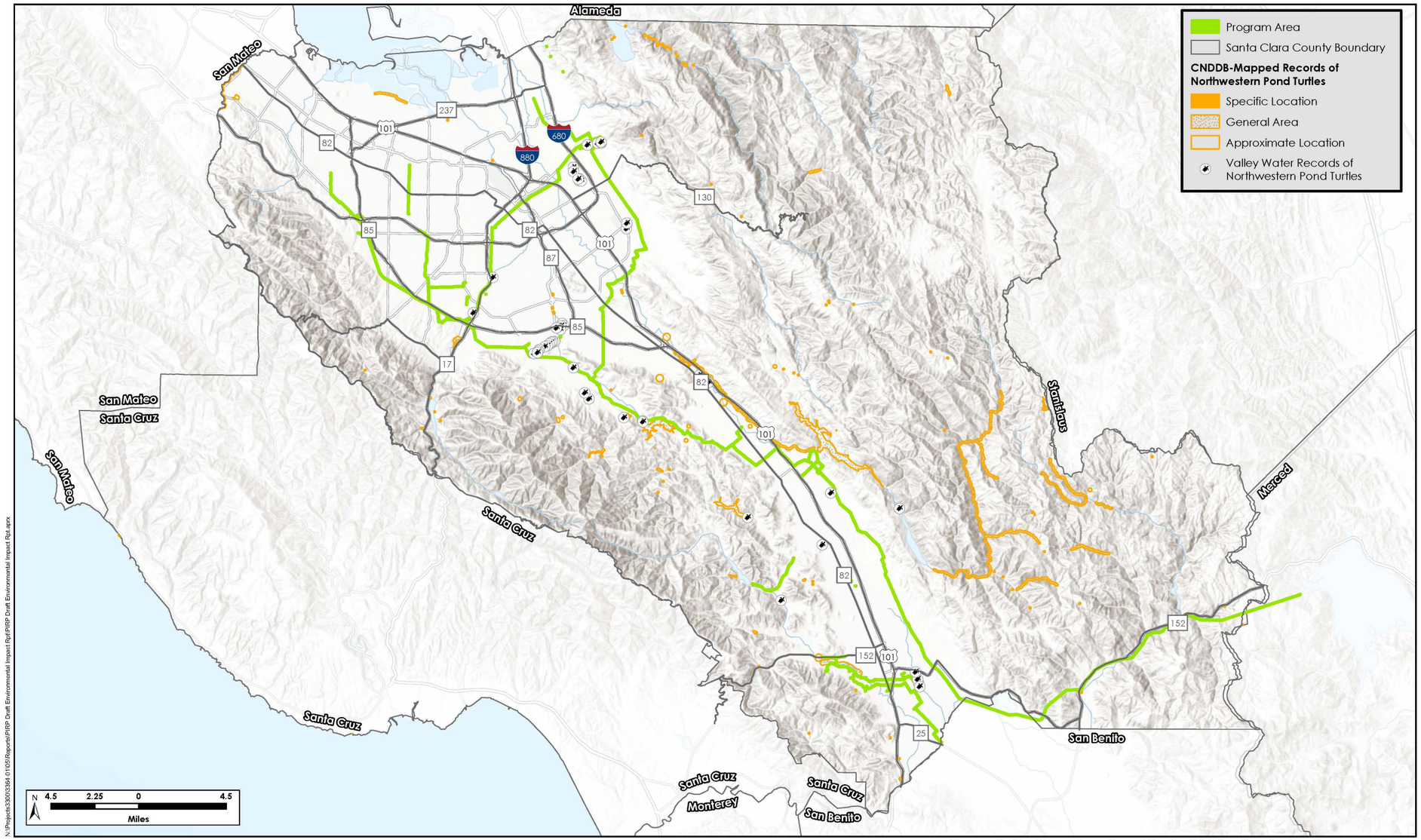

Figure 8. Northwestern Pond Turtle Distribution in the Program Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05) December 2023

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Figure 3.3-9 Least Bell's Viero Habitat and Potential for Occurrence in the Program Area

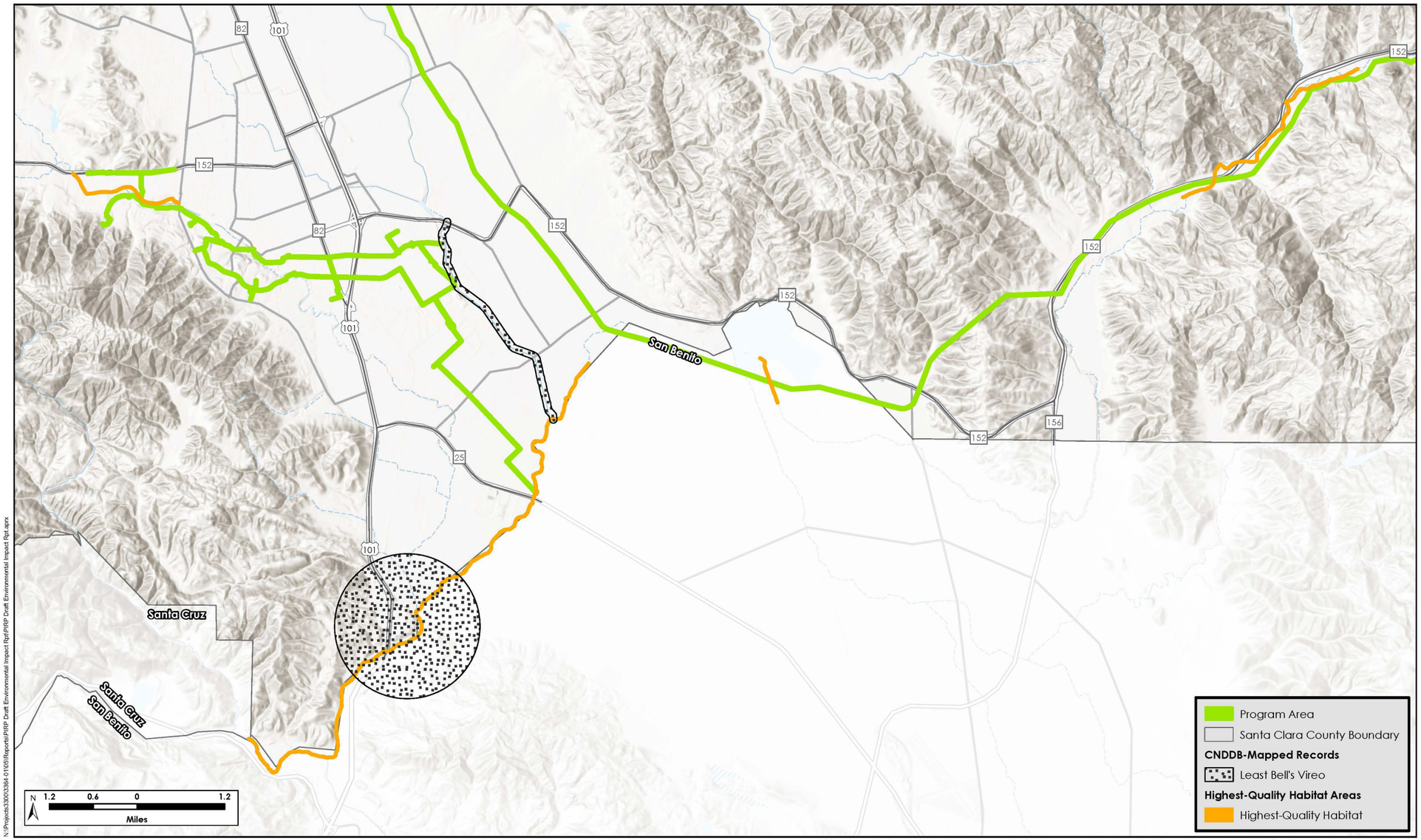

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Figure 9. Least Bell's Vireo Habitat and Potential for Occurrence in the Program Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
December 2023

Figure 3.3-10 San Fransico Common Yellowthroat in the Program Area

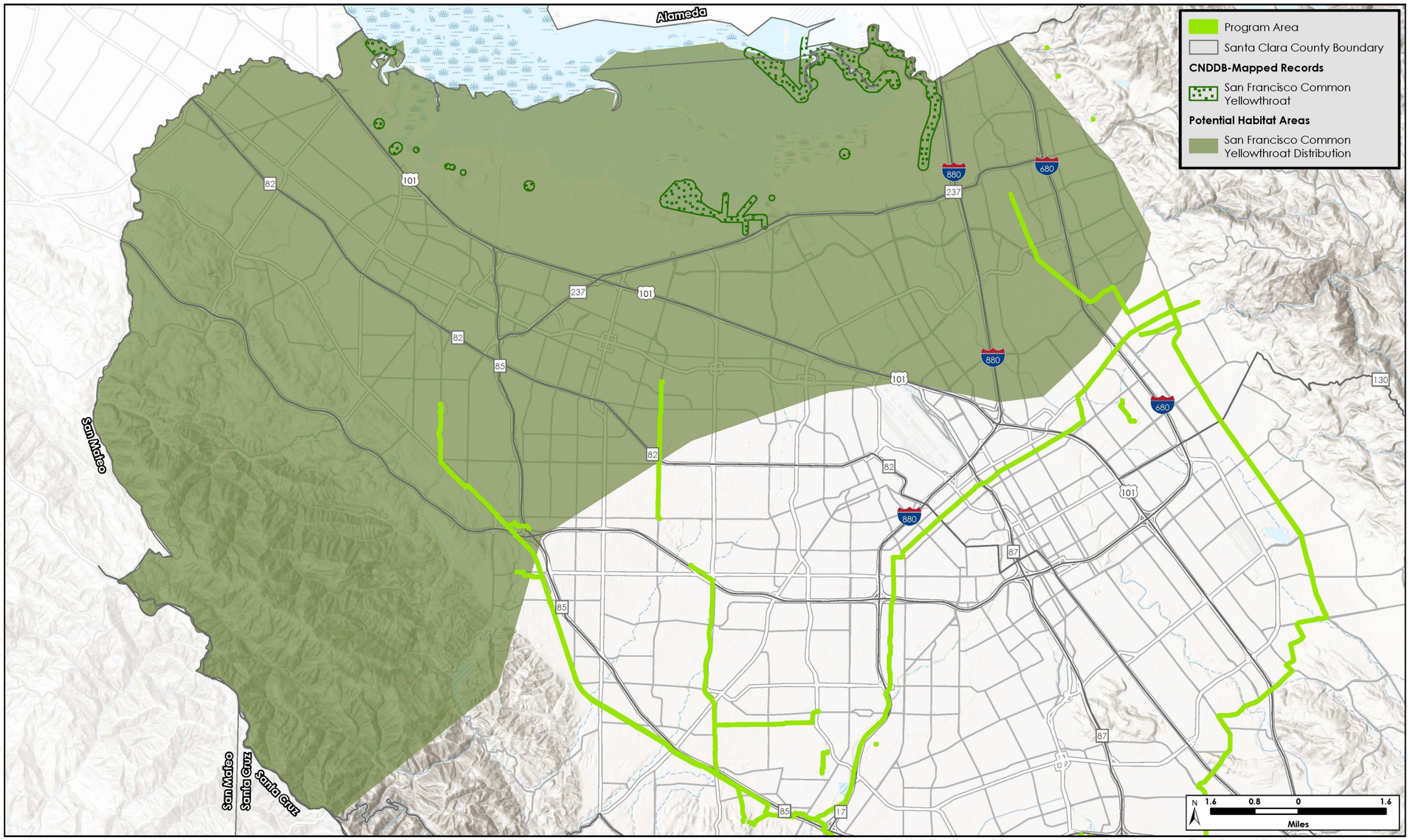

Figure 10. Distribution of San Francisco Common Yellowthroat in the Program Area
Pipeline Maintenance Program Draft Environmental Impact Report (3364-05)
December 2023

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Ecological Consultants

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.

Vegetation communities along streams and rivers in the program area function as corridors for wildlife movement. Natural habitats (e.g., oak woodlands and scrub) throughout the program 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 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, as well as in an east-west direction along the main stem of Pacheco Creek in the Pacheco Pass area. 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.

Critical Habitat

Designated critical habitat for the Bay checkerspot butterfly, California red-legged frog, California tiger salamander, Central California Coast steelhead, and South-Central California Coast steelhead is present within the program area (Figure 3.3-2, Figure 3.3-4, Figure 3.3-5, and Figure 3.3-6).

3.3.2 Regulatory Setting

Federal Regulations, Policies, and Standards

Clean Water Act Section 404

The CWA functions to maintain and restore the physical, chemical, and biological integrity of waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, USACE jurisdiction extends to the ordinary high water (OHW) mark, which is defined in Title 33, Code of Federal Regulations, Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark to the outer edges of the wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may be subject to USACE jurisdiction. In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line. The high tide line is defined in 33 Code of Federal Regulations Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide." If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark or high tide line to the outer edges of the wetlands. A May 25, 2023, U.S. Supreme Court decision in *Sackett v. Environmental Protection Agency* limited the definition of jurisdictional wetlands and other waters that are considered waters of the U.S. to those wetlands and other waters having a continuous surface connection with traditional navigable waters or their relatively permanent tributaries.

Construction activities within jurisdictional waters are regulated by the USACE. The discharge of dredge/fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of Section 401 Water Quality Certification. The State Water Resources Control Board (SWRCB) is the state agency (together with the RWQCBs) charged with implementing water quality certification in California.

Pipelines within the program area intersect streams that are likely to be claimed, as well as wetlands that may be claimed, as waters of the U.S. by the USACE. On an as-needed basis, Valley Water would continue to apply for Section 404 permits under the CWA for program activities. These permits are necessary for program activities that result in the discharge of dredged or fill materials to waters of the U.S. Valley Water has rarely needed to obtain these permits for program activities. Valley Water may be able to utilize the Stream Maintenance Program's programmatic permits (e.g., for a small bank repair at a pipeline outlet along a stream) in some locations where Section 404 permitting would be required. A Regional General Permit (Section 404) for VHP-covered activities is also available and may be used to provide coverage for certain VHP-covered program activities that have impacts to waters of the U.S, and program activities may qualify for one of several Nationwide Permits as well.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that a proposed project will uphold state water quality standards. Because California's jurisdiction to regulate

its water resources is much broader than that of the federal government, proposed impacts on waters of the state require Water Quality Certification by the USACE under the CWA even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not. RWQCB jurisdiction is discussed under *Porter-Cologne Water Quality Control Act* below under State Regulations, Policies, and Standards.

Clean Water Act Section 402

Section 402 of the CWA regulates the discharges of pollutants to waters of the U.S. to limit water quality impacts. Under Porter-Cologne, the SWRCB and the nine regional boards have the responsibility of granting CWA NPDES permits for certain point-source and non-point discharges to waters. All dewatering in support of the program is a covered release under the *NPDES Permit for Drinking Water System Discharges to Waters of the United States* (Order WQ-2014-0194-DWQ). A Statewide Discharge Permit, No. 4DW062, was issued to Valley Water by the SWRCB under this permit in December 2015. The Statewide Discharge Permit includes BMPs and water quality parameter limitations to ensure that the receiving waters' beneficial uses are not adversely affected.

In addition, as discussed in detail under State Water Resources Control Board Stormwater Regulation below, construction projects in California causing land disturbances that are equal to 1 ac or greater must comply with state requirements to control the discharge of stormwater pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ, as amended and administratively extended).

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 prohibits the creation of any obstruction to the navigable capacity of waters of the U.S., including discharge of fill and the building of any wharfs, piers, jetties, and other structures without Congressional approval or authorization by the Chief of Engineers and Secretary of the Army (33 U.S.C. 403).

Navigable waters of the U.S., which are defined in 33 CFR, Part 329.4, include all waters subject to the ebb and flow of the tide, and/or those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as "the line on the shore reached by the plane of the mean (average) high water." It is important to understand that the USACE does not regulate wetlands under Section 10, only the aquatic or open waters component of bay habitat, and that there is overlap between Section 10 jurisdiction and Section 404 jurisdiction. According to 33 CFR, Part 329.9, a waterbody that was once navigable in its natural or improved state retains its character as "navigable in law" even though it is not presently used for commerce as a result of changed conditions and/or the presence of obstructions. Historical Section 10 waters may occur behind levees in areas that are not currently exposed to tidal or muted-tidal influence, and meet the following criteria: (1) the area is presently at or below the mean high water line; (2) the area was

historically at or below mean high water in its "unobstructed, natural state"; and (3) there is no evidence that the area was ever above mean high water.

As mentioned above, Section 404 of the CWA authorizes the USACE to issue permits to regulate the discharge of dredged or fill material into waters of the U.S. If a project also proposes to discharge dredged or fill material and/or introduce other potential obstructions in navigable waters of the U.S., a Letter of Permission authorizing these impacts must be obtained from the USACE under Section 10 of the Rivers and Harbors Act.

No current or historical Section 10 Waters are present within or adjacent to the program area. Therefore, a Letter of Permission from the USACE is not required.

Federal Endangered Species Act Section 7

FESA protects federally listed wildlife species from harm or take, which is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." Take can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as take even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands.

The USFWS and the National Marine Fisheries Service have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under FESA but may become listed in the near future and are often included in their review of a project.

A number of federally listed, proposed, and candidate species have the potential to be impacted by program activities, including the Santa Clara Valley dudleya, Metcalf Canyon jewel-flower, Bay checkerspot butterfly, large marble butterfly, monarch butterfly, Central California Coast steelhead, South-Central California Coast steelhead, California tiger salamander, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, least Bell's vireo, and San Joaquin kit fox. The California condor is expected to occur in program area only as a nonbreeding forager, and no impacts due to program activities on this species are anticipated.

Incidental take approval for VHP-covered federally listed species in Santa Clara County is provided via the VHP for VHP-covered activities, and such take approval may be provided via the SBCCP for SBCCP-covered federally listed species in San Benito County in the future. Endangered species consultations for federally listed species that are not covered species under the VHP or SBCCP and for activities outside the VHP or SBCCP permit areas occur on an as-needed basis. For example, Section 7 consultations may occur between the Bureau of Reclamation (Reclamation) as the landowner for some program facilities or USACE (if a Clean Water Act Section 404 permit is needed and the USFWS and/or NMFS if discretionary actions by Reclamation or the USACE are necessary.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with NMFS regarding potential adverse effects of their actions on EFH and respond in writing to recommendations by NMFS.

The Pacific Fisheries Management Council has designated EFH for the Pacific Coast Salmon FMP within a number of creeks in the program area due to the presence of the Chinook salmon. Coyote Creek is designated as EFH for this species (Pacific Fishery Management Council 2023). Chinook salmon also occur in the Guadalupe River watershed; within this watershed, spawning has been observed in Los Gatos Creek, Guadalupe Creek, Alamitos Creek, Calero Creek, and the mainstem Guadalupe River. NMFS considers any habitat used by Chinook salmon in the South Bay (including nontidal waters in the Coyote Creek and Guadalupe River watersheds that are accessible to Chinook salmon) to be EFH. If any federal actions (e.g., involving Reclamation or the USACE) are needed for program activities, and impacts to EFH may occur, the lead federal agency may coordinate with NMFS regarding measures to minimize impacts to EFH.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, 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 it prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the USFWS in its June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents". Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction.

All native bird species that occur in the program area are protected under the MBTA except for California quail, which is among the groups explicitly exempted from MBTA protection.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Sec. 668 et seq.) makes it unlawful to import, export, take, sell, purchase, or barter any bald eagle or golden eagle, or their parts, products, nests, or eggs. Take includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbance. Exceptions may be granted by the USFWS for

scientific or exhibition use, or for traditional and cultural use by Native Americans. However, no permits may be issued for import, export, or commercial activities involving eagles.

Although both bald eagles and golden eagles have the potential to nest near the program area, take of these species due to program activities would be avoided through the implementation of avoidance and minimization measures related to nesting eagles. Thus, no coordination to obtain a Bald and Golden Eagle Protection Act incidental take permit from USFWS is anticipated.

State Regulations, Policies, and Standards

Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA (discussed separately under Federal Regulations, Policies, and Standards above) and the Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director has stated that, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

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*. 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 both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs to impact.

In the program area, the San Francisco Bay RWQCB heads up regulation of impacts to waters of the state within the watershed of San Francisco Bay, the Central Coast RWQCB leads activities within the watershed of the Pajaro River, and the Central Valley RWQCB leads activities within the limited areas in Merced County that drain toward the Central Valley.

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 RWQCB would claim as waters of the state 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 jurisdictions over

streams up to top of bank, or to the outer edge of the canopy of riparian trees and shrubs, whichever extends further landward. Any program 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.

On an as-needed basis, Valley Water would continue to apply for 401 certifications and Waste Discharge Requirements on a case-by-case basis for program activities. Due to the relatively small scope and scale of impacts associated with most program activities, Valley Water has rarely triggered the need to obtain these permits under the PMP. Valley Water may also use the Stream Maintenance Program's programmatic permits (e.g., for a small bank repair at a pipeline outlet along a stream) in some locations where Section 401 permitting would be required.

California Endangered Species Act

CESA (California Fish and Game Code, Chapter 1.5, Sections 2050-2116) 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). The CDFW regulates activities that may result in take of individuals (i.e., "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 California Fish and Game Code. The CDFW, however, has interpreted take to include the "killing of a member of a species which is the proximate result of habitat modification."

Several state-listed or candidate species may occur in the program area and have the potential to be impacted by program activities, including the Crotch's bumble bee, California tiger salamander, foothill yellow-legged frog, bald eagle, Swainson's hawk, least Bell's vireo, tricolored blackbird, mountain lion, and San Joaquin kit fox. The California condor and bank swallow are expected to occur in program area only as nonbreeding foragers, and no impacts due to program activities on these species are anticipated. Incidental take approval for VHP-covered state-listed species would be provided via the VHP for VHP-covered activities in Santa Clara County, and such take approval may be provided via the SBCCP for SBCCP-covered federally listed species in San Benito County in the future. Incidental take of state-listed species that are not covered species under the VHP or SBCCP and/or from activities outside the VHP and SBCCP coverage areas would continue to be approved via Incidental Take Permits sought by Valley Water from CDFW, on an as-needed basis.

California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources,

and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced four lists (amphibians and reptiles, fishes, birds, and mammals) of "species of special concern" that are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered rare and/or sensitive for purposes of this environmental review per the CEQA Section 15380(b).

The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the CNPS Inventory of Rare and Endangered Plants (CNPS 2024). The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

CRPR 1A Plants considered extinct.

CRPR 1B Plants rare, threatened, or endangered in California and elsewhere.

CRPR 2A Plants considered extinct in California but more common elsewhere.

CRPR 2B Plants rare, threatened, or endangered in California but more common elsewhere.

CRPR 3 Plants about which more information is needed - review list.

CRPR 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

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and adverse effects to these species may be considered significant. Impacts on plants that are listed by the CNPS on CRPR 3 or 4 are also considered

during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of sensitive natural communities, and the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings are a reflection of the condition of a habitat within California. If an alliance is marked as a G1–G3, all of the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP's) currently accepted list of vegetation alliances and associations (CDFW 2024).

All potential impacts of program activities on biological resources would be considered during CEQA review of the program in the context of this EIR. Program impacts on biological resources are discussed in Section 3.3.3 below.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA), enacted in 1977, allows plants to be designated as rare or endangered by the California Fish and Game Commission (Fish and Game Code Sections 1900–1913). The NPPA includes prohibitions on the take of such plants, with exceptions for certain activities. A total of 64 species, subspecies, and varieties of plants are considered "rare" by the NPPA.

No plant species protected under the NPPA potentially occur within the program area.

California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. A stream is defined in Title 14, California Code of Regulations Section 1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code Section 2786 defines riparian habitat as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, CDFW regulates any project proposed by any person that will "substantially divert or obstruct the natural flow or substantially change

the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds." California Fish and Game Code Section 1602 requires an entity to notify CDFW of any proposed activity that may modify a river, stream, or lake. If CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, an LSAA must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Certain sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by the CDFW. Raptors (e.g., eagles, hawks, and owls) and their nests are specifically protected in California under Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered take by the CDFW.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515 identify "fully protected" bird, mammal, amphibian, reptile, and fish species. Fully protected species that occur or potentially occur in the program area are the ringtail, California condor, golden eagle, bald eagle, and white-tailed kite. Senate Bill No. 147 amended the Code to allow permits to be issued by the CDFW for take of these species for eligible projects (including critical regional or local water agency infrastructure maintenance, repair, or improvement projects, such as the program) under certain conditions including the avoidance of take to the maximum extent possible, implementation of a monitoring and adaptive management program to minimize and fully mitigate impacts, and payment of a permit application fee.

Most native bird, mammal, and other wildlife species that occur in the program area and in the immediate vicinity are protected by the California Fish and Game Code.

CDFW regulates all streams within the program area under Section 1600 of the California Fish and Game Code, and section 1600 Lake and Streambed Alteration Agreements (1600 Agreements) are needed for dewatering of raw and treated pipelines to streams. One 1600

Agreement, on average, is acquired each year for pipeline dewatering events that include releases to streams. Valley Water therefore intends to pursue a long-term (5–15 year) RMA with CDFW. An RMA covers multiple routine maintenance activities, such as the recurring program dewatering events for raw and treated pipelines. The RMA would streamline efforts for both Valley Water and CDFW. Besides pipeline dewatering, program activities that would require an Agreement (e.g., a bank repair) are rarely needed, and Valley Water would continue to apply for 1600 Agreements on an as-needed basis for these types of activities.

State Water Resources Control Board Stormwater Regulation

Construction Phase. Construction projects in California causing land disturbances that are equal to 1 ac or greater must comply with state requirements to control the discharge of stormwater pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ, as amended and administratively extended). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized.

Standard permit conditions under the Construction General Permit requires that the applicant utilize various measures including: on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors. Additionally, the Construction General Permit does not extend coverage to projects if stormwater discharge-related activities are likely to jeopardize the continued existence or result in take of any federally listed endangered or threatened species.

Post-Construction Phase. In many Bay Area counties, including Santa Clara County, projects must also comply with the California RWQCB, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (Water Board Order No. R2-2015-0049, as amended). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

All program activities would comply with the requirements of the NPDES Statewide Storm Water Permit and Statewide General Construction Permit.

Pacheco State Park General Plan

Pacheco State Park is a 6,900-acre park consisting of former ranchlands along and south of State Route 152 in Merced County. Valley Water has an easement that extends through the park for the purpose of providing water from San Luis Reservoir to Santa Clara County. A portion of the

Pacheco Pumping Station, all of the Pacheco Tunnel, and the easternmost approximately 2,000 feet of the Pacheco Conduit are located within the boundaries of Pacheco State Park.

The Pacheco State Park General Plan identifies goals and guidelines to direct future management of the park, including protecting large areas of blue oak woodlands and open grasslands in the Diablo Range, as well as historic and cultural resources. Master Plan goals and guidelines that related to Valley Water program activities occurring within the park are as follows:

Goal OPS-L3: Work with the Santa Clara Valley Water District to ensure that maintenance or other work on the water distribution tunnel crossing the Park does not interfere with Park operations or significantly affect resources.

Guideline: Set up a Memorandum of Agreement to ensure a standard operating procedure for future maintenance and implementation of tunnel easement activities.

All potential impacts of program activities on biological resources in Pacheco State Park are addressed in the context of this chapter.

Public Resources Code, Section 21083.4-Oak Woodland Conservation
California Public Resources Code (CPRC), Section 21083.4 requires that, as part of determining whether an environmental impact report, a negative declaration, or a mitigated negative declaration shall be required for any project (Section 21081.1 CPRC), a county determine whether a project within its jurisdiction may result in a conversion of oak woodlands that have a significant effect on the environment. If a significance finding is made the county shall require oak woodland mitigation that may include one or more of the following measures: (1) conserve oak woodlands through the use of conservation easements, (2) plant an appropriate number of trees, (3) contribute funds to the Oak Woodlands Conservation Fund, and (4) other measures as approved by the county that reduce the impact to a less than significant level. Several types of projects are exempt from these provisions including those undertaken pursuant to an approved Natural Community Conservation Plan (such as the VHP), affordable housing projects, conversion of oak woodlands on agricultural land and when the regulatory program of a state agency requires a plan or other written documentation containing environmental information (Section 21080.5 CPRC). For purposes of this section, the term "oak" is defined as a native tree species in the genus *Quercus* with a diameter at breast height of greater than 5 inches and is not a species designated as use for commercial purposes including (A) the cutting or removal of trees that are processed into logs, lumber, or other wood products and offered for sale, barter, exchange, or trade, or (B) the cutting or removal of trees or other forest products during the conversion of timberlands to land uses other than the growing of timber, including, but not limited to, residential or commercial developments, production of other agricultural crops, recreational developments, ski developments, water development projects, and transportation projects (Section 4526 of the CPRC).

Oak woodlands are present in the program area. Any program impacts to oak woodlands would be limited, and would consist of tree limbing and occasionally tree removal for the

purpose of maintaining access or mitigating safety hazards. The proposed program would not result in the conversion of oak woodlands as defined under CPRC Section 21083.4.

Local Regulations, Policies, and Standards

Santa Clara County
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. The VHP 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 VHP will protect, enhance, and restore natural resources in specific areas of Santa Clara County and contribute 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 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. In addition to obtaining take authorization for each participating agency's respective activities, the cities and County would be able to extend take authorization to project applicants under their jurisdiction.

The USFWS and CDFW also provide assurances to the Permittees that no further commitments of funds, land, or water are 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 are larger in scale, more ecologically valuable, and easier to manage than the individual mitigation sites created under the current approach.

The VHP and associated documents are approved and adopted by the six Local Partners (Cities of Gilroy, Morgan Hill and San José, County of Santa Clara, Santa Clara Valley Transportation Authority, and Valley Water).

Most of the program area is currently located within the VHP permit area, and Valley Water's program activities are explicitly included as covered activities under the VHP (ICF International 2012). In addition, under an amendment that is expected to be approved in 2026, the VHP permit area is being expanded so that it would include all PMP activities within Santa Clara

County. Valley Water complies with all applicable VHP conditions for VHP-covered program components. Program activities in San Benito and Merced Counties are not covered by the VHP, and Valley Water is not required to comply with VHP conditions for such activities.

County of Santa Clara Oak Woodlands Impact Guidelines

The Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts (Santa Clara Planning Office 2011) presents guidelines for Santa Clara County's evaluation of oak woodlands impacts when it serves as a CEQA lead agency, pursuant to Public Resources Code Sec. 21083.4. These guidelines do not apply to projects where Valley Water is the lead agency.

Valley Water is the CEQA lead agency for the program. Because the County's guidelines are only applicable when the County of Santa Clara serves as the CEQA lead agency, these guidelines are not applicable to the program.

Local Tree Ordinances

Santa Clara County's tree ordinance (County Code Division C16) protects protected trees, as defined, on any private or public property in designated areas of the county and which measure over 37.7 inches in circumference (12 inches or more in diameter) measured 4.5 feet above the ground, or which exceed 20 feet in height. Removal of protected trees requires an administrative permit from the County. The permit requires mitigation for removed trees by replacement planting on or offsite at a mitigation ratio determined by the County Planning Department.

The County tree ordinance is applicable only to unincorporated areas of the county; within the limits of an incorporated city, it is superseded by that City's tree ordinance, if one exists. Because of the vast geographic expanse of the program area, multiple localities traversed by program facilities have tree ordinances.

Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various localities within the program area under either Government Code sections 53091(d) or (e) (which state that County or City building and zoning ordinances do not apply to the construction of facilities for water storage or transmission), or for nonbuilding and zoning ordinances, under *Hall v. Taft* (1956) 47 Cal. 2d 177, 189 (which holds that 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. Nevertheless, recognizing the importance of protected trees, Valley Water is voluntarily proposing to plant replacement trees consistent with local ordinance requirements in the unlikely event that tree removal is necessary to support program activities.

Santa Clara County General Plan

The Santa Clara County General Plan was adopted in 1994 as a countywide general plan. It outlines a series of strategies, policies, and implementing actions that are guided by a number of defined goals. The General Plan's resource conservation goals include maintaining a healthy, well-functioning natural environment; conserving and protecting creeks, streams, and Baylands

habitats; and protecting natural heritage resources. Strategies include working with Valley Water to implement a countywide recreational trail system, ensure water quality, coordinate water supply planning, and manage flood hazards.

General Plans of Incorporated Cities within Santa Clara County

Various local geological resources and hazards are the responsibility of the incorporated cities or towns within Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to geological resources:

- City of Campbell (City of Campbell 2023)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2022)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 1983)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The biological resource-related policies in these plans vary in their objectives related to biological resources, but generally discuss working with agencies such as Valley Water to achieve goals such as providing accessible open space (e.g., public trails along creeks), preserving sensitive wetlands and riparian habitats, protecting streams and riparian setbacks, protecting water quality, restricting creek channelization, planting native trees, and removing invasive species, among others.

San Benito County

San Benito County Conservation Plan

The SBCCP is a forthcoming county-wide joint HCP and NCCP. San Benito County started the planning and development of the upcoming SBCCP in 2021.

Valley Water has requested that San Benito County provide for Valley Water program activities in northern San Benito County to gain coverage under the SBCCP as a Participating Special Entity. This approach would streamline FESA and CESA incidental take approvals for Valley Water, USFWS, and CDFW if and when the SBCCP is approved.

San Benito County General Plan

The San Benito County General Plan provides goals and policies related to environmental protection, economic expansion, and equity, with a vision to balance business and residential growth with the management of natural (and other) resources. Principles include the protection of natural resources and open space areas from incompatible uses, and preservation of the county's environmental quality and diverse natural habitats.

Merced County

Merced County General Plan

The Merced County General Plan includes goals to preserve and protect biological resources. Related policies include identifying natural lands, wetlands, riparian habitats, and other natural resources, and supporting their growth and/or ensuring their protection and preservation.

3.3.3 Impact Assessment Methodology

Overall, program impacts on biological resources would be limited. Although inspection and maintenance activities are projected to occur over a large geographic area and the program area intersects a number of sensitive habitats, Valley Water's careful approach minimizes impacts on sensitive habitats and species. For instance, as described in the Project Description, the updated PMP Manual would specify that previously disturbed areas are to be prioritized for staging and parking, and preferred access routes are to be clearly defined to avoid sensitive resources. In addition, equipment would be mounted on trucks, and appurtenances may be abandoned in-place (rather than excavated and removed) to minimize ground disturbance. Most PMP activities would involve minor day-to-day routine inspections (non-ground-disturbing inspections and internal inspections), which are performed within existing developed areas or within the pipelines themselves when feasible, and such activities are expected to have limited to no impacts on biological resources. Furthermore, no work would occur along buried sections of tunnels as part of the program.

Nevertheless, program activities can potentially result in adverse effects on sensitive biological resources. This impact analysis focuses on potential effects of program activities on biological resources based on existing baseline conditions in the program area as described in Section 3.3.1. Impacts are discussed in this *Impact Assessment Methodology* section as they would occur in the absence of Valley Water BMPs and program AMMs; under *Impact Analysis* below, impacts on specific habitats, communities, and species are discussed more specifically with the implementation of applicable BMPs and AMMs that are incorporated as part of the program to reduce impacts on biological resources.

Impact Assessment Overview

Potential program impacts on biological resources were systematically evaluated both at the program level and cumulatively. In the sections under Section 3.3.4, impacts are described for all program activities, including day-to-day inspection and maintenance activities that represent the majority of work activities that would occur under the program, as well as any program-covered activities requiring larger-scale construction efforts that would potentially occur. The significance of the impacts with implementation of Valley Water BMPs, program-specific AMMs, and VHP conditions is then determined. For impacts that remain significant with implementation of these measures, feasible mitigation measures are identified, and the significance of the impacts is then re-evaluated to determine whether mitigation measures reduce impacts to a less than significant level.

Biological resources in the program area may be impacted not only by PMP-covered activities but also, in a few cases, by mitigation measures and program-specific AMMs. These mitigation measures and program-specific AMMs would, overall, reduce or avoid significant impacts; however, in a few cases, adverse effects may occur from implementation of the AMMs or mitigation measures themselves. For example, although relocation of fish 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 program-specific AMMs and the mitigation program are also analyzed, where appropriate.

In general, the primary adverse effects of the program on biological resources would occur at the time that program activities take place, and during the period immediately following program activities. Potential impacts of the majority of day-to-day inspection and maintenance activities are expected to be negligible, while impacts of construction projects would be greater, depending on the location and the nature of the activity. Potential program impacts are expected to include direct and indirect adverse effects on riparian, wetland, and instream habitats; impacts 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 impacts would be of short duration (e.g., where herbaceous vegetation would regrow within 1 year following the impact), in some cases program activities would result in longer-term impacts. Most program activities are or would eventually (following a pending amendment to the VHP) be covered under the VHP; in accordance with VHP requirements, impacts on non-developed land cover types are considered temporary if the impact occurs over a period of less than 1 year and the area is returned to existing (or better) conditions within 1 year following the completion of the work. Impacts on non-developed land cover types are considered permanent if the duration of the work is greater than 1-year (which is not expected for program activities) or the impact area would take longer than 1 year to return to existing (or better) conditions.

The methodology used to assess program impacts on biological resources is as follows:

- Qualitative analysis of the types of impacts on biological resources that could occur as a result of program tasks (i.e., general tasks, pipeline draining and refilling tasks, and pipeline system infrastructure maintenance and repair tasks). This discussion is provided under *Program Tasks and Impacts* below and referenced under Section 3.3.4.

- Quantitative estimates of impacts (e.g., acreages of certain habitat types) have been provided where adequate information is currently available, regarding both anticipated program activities and the distribution of biological resources, to allow for a quantitative estimate. This analysis broadly estimates the expected locations and potential magnitude of potential program impacts, based on (1) work area locations; (2) assumptions regarding the anticipated extent of impacts of various activities within upland, riparian, and wetland habitats; and (3) experience from the 2007 PMP. This discussion is provided under *Quantification of Impacts* below and referenced under Section 3.3.4.

Program Tasks and Impacts

This section identifies which program tasks would result in certain types of biological resource impacts that are discussed in greater detail under Section 3.3.4.

All Tasks

All PMP tasks would involve the physical presence of people, and many would require the use of some type of equipment during inspection and maintenance activities, which can result in adverse indirect effects on animals due to the presence of human activity, noise, and equipment. This may result in animals moving out of the area or abandonment of a den, nest, or roost. Crewmembers could leave trash at a work location, which can result in an increase in native and nonnative predators that are attracted to the trash and that would prey opportunistically on, or compete with, sensitive animal species. In addition, nitrogen emitted by maintenance vehicles and equipment can fertilize serpentine soils in the region, facilitating the establishment and growth of nonnative grasses and forbs that would not typically be able to colonize (at least robustly) serpentine habitats, and leading to competition with special-status serpentine plants and hostplants for Bay checkerspot and monarch butterflies.

General Tasks

General tasks include setup, staging, and access; control of hazardous energy (lockout/tagout); and pump-out of vaults.

Setup, staging, and access can involve vegetation management, off-road vehicle access, the installation of gravel, and the use of heavy equipment. Impacts of setup, staging, and access include vegetation removal (which includes both mechanical methods and herbicide application, as well as tree removal) and ground disturbance, which could result in the loss of special-status plants or host plants of special-status invertebrate species, as well as the temporary or permanent loss of habitat for plant and wildlife species in the work area. Ground disturbance and vegetation removal also may result in an increase in erosion and sedimentation. The mobilization of dust during vehicle and equipment operation could impact plants 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 work activities can also harm riparian communities and reduce their extent and overall health. 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. Small mammal burrows can also be crushed by heavy equipment, and animals occupying the burrows may be killed. Minor spills of petrochemicals, hydraulic fluids, and solvents may occur during refueling or as a result of leaks, with a risk of larger releases. The storage of materials can provide refugia for a number of animal species, and individuals can potentially be injured or killed when the materials are moved.

The control of hazardous energy (lockout/tagout) task is not expected to impact biological resources beyond the limited impacts listed under *All Tasks* above, as this task consists only of

an employee locking or tagging machinery or equipment prior to and following program activities.

The pump-out of vaults would be a short-duration task (typically less than 1 hour, often less than 15 minutes) that involves accessing vaults, hosing them down, and pumping water out. Typical personnel and equipment include two staff, two trucks, and a pump. Impacts of vault pump-out include vegetation removal (typically for the installation of erosion control BMPs), dust mobilization, erosion and sedimentation, the use of heavy equipment, introduction of nonnatives and pathogens, and spills and leaks, as discussed for setup, staging, and access above. In addition, the pump-out of vaults can result in the discharge of water into uplands or streams, and work may occur within the bed and banks of streams. Discharge of water into uplands may alter the hydrology that supports plants and animals already present in those upland areas. The discharge of water into streams can result in scour from increased flows, and changes in water temperature or dissolved oxygen due to the added water (though such effects would be extremely limited due to the small volumes of water).

Pipeline Draining and Refilling Tasks

Pipeline draining and refilling tasks are isolation, dewatering, and refilling.

The isolation and refilling of pipelines would not be expected to result in impacts on biological resources beyond the limited impacts listed under *All Tasks* above. Isolation would be limited to the operation of a valve either remotely or manually in the field. Pipeline refilling involves flushing, refilling, pressure-testing, and disinfection of pipelines. This task typically involves small crews of one to give people, and a truck to replace vault covers.

Pipeline dewatering involves closing valves to redirect water to a surface pipeline release point using gravity flows followed by pumping at rates of 3–11 cubic feet per second at low points as needed. The amount of water released and the total drainage time would vary. Typical equipment includes a maintenance crew, portable generators, pumps, and vehicles. Flow rates would be adjusted to minimize scouring and the effects of rapid water-level increase and decrease. Water that would be pumped out from pipelines and vaults would be prioritized for release into areas that provide a beneficial use (e.g., an orchard, golf course pond, percolation pond, etc.), where feasible. If a beneficial use is not identified, recycled water would be released into a sanitary sewer, while treated water (after dechlorination) and raw water would be released into a nearby creek. In urban areas, such releases often occur via a storm drain systems that releases into a creek. Elsewhere, releases would occur directly into a nearby creek. In the few situations where a creek is not present, water would be released into nearby upland areas or a to water truck.

Impacts of pipeline dewatering include vegetation removal (which includes tree removal), dust mobilization, erosion and sedimentation, introduction of nonnatives and pathogens, the release of waters into uplands and creeks, spills and leaks, work in the bed and banks of streams, as discussed for *General Tasks* above. Discharge of water into uplands may alter the hydrology that supports plants and animals already present in those upland areas. The release of water into

streams can result in scour from increased flows, and changes in water temperature or dissolved oxygen due to the added water; such effects would be greater than those discussed for pump-out of vaults above due to the greater volumes of water that would be released. In addition, if shutdown involves a pipeline that is currently functioning to augment stream flows during a drought year or under other conditions when pipeline water is necessary to maintain instream flows and aquatic habitat, the reduction in water supply could result in the loss of instream aquatic habitat.

Pipeline System Infrastructure Maintenance and Repair Tasks

Pipeline system infrastructure maintenance and repair actions include excavation, backfill, construction, and other ground disturbance; repair of pipeline system infrastructure; and non-ground-disturbing repair.

Ground disturbance can occur as a result of excavation for external pipeline inspections, pipeline facility maintenance, road and supporting structure maintenance, bank stabilization, and vegetation maintenance. Excavation would involve delimiting the excavation area, clearing the area of debris or vegetation, and using backhoes or excavators to excavate around the existing pipeline, vault, or access road. Bank stabilization would include the installation of hard structures or plantings to stabilize banks prior to pipeline draining, as well as to address bed and bank erosion around pipelines and/or appurtenances. Equipment would include flatbed delivery trucks, water trucks, backhoes, excavators, compactors, sump pumps, shoring equipment, dump trucks, concrete trucks, and loaders/dozers, as well as water pumps and piping if a diversion would be necessary. Impacts from ground disturbance include vegetation removal (including tree removal), dust mobilization, erosion and sedimentation, the use of heavy equipment, the introduction of nonnatives and pathogens, spills and leaks, work in the bed and banks of streams as discussed for *General Tasks* above. Where ground disturbance occurs in streams, dewatering and diversions may be necessary if flowing water is present. Dewatering would result in the temporary loss of aquatic habitat in the channel. Excavations that result in the creation of pits or trenches can also potentially trap animals such as amphibians and reptiles, which can then be injured or killed due to work activities.

Pipeline system infrastructure repair may involve replacing valves, replacing pipeline sections, and installing new appurtenances. Equipment would include backup generators, meters, vaults, storage tanks, pump stations, and surge tanks. Impacts from this task include the introduction of nonnatives and pathogens, spills and leaks, and work in the bed and banks of streams as discussed for *General Tasks* above.

Non-ground-disturbing repair consists of the maintenance and replacement of aboveground pipeline features, backup generators, pump stations, and water tanks. Typical equipment includes work trucks and hand-held tools. However, a small crane or hoist may be used for pump replacement. Where the repair of pipeline system infrastructure occurs in-kind without ground disturbance, such activities would have little potential to impact special-status plants and animals, or their habitat. Non-ground-disturbing repairs to appurtenances, backup generators, water tanks, and other infrastructure would also generally not result in direct effects

on special-status plants, with the exception of vegetation removal that may be performed in support of these activities. Additional potential impacts from this task include erosion and sedimentation, the introduction of nonnatives and pathogens, and spills and leaks as discussed for *General Tasks* above.

Quantification of Impacts

Estimated program impacts for activities expected to have a measurable impact (e.g., in acres) within upland, riparian, and wetland areas are provided for each applicable task or activity type below, and summarized in Table 3.3-3 and further detailed in the following subsections.

Table 3.3-3 Impact Quantification Summary

Activity	Upland Impacts	Riparian Impacts	Stream and Wetland Impacts
Day-to-Day Inspection and Maintenance	Negligible	Negligible	Negligible
Off-Road Access	0–15 routes/pipeline Width: 15 feet Length: several feet to 1.0 mile Routes longer than a few hundred feet are limited to a few locations	Up to 0.05 acre/pipeline	10 feet long by the width of the channel
Setup and Staging	Most off-road staging areas would be 0.01 acre, a few larger staging areas would be up to 0.23 acre	Up to <0.01 acre at a few locations per pipeline	None
Excavation	Up to 12.12 acres of linear excavations along up to four pipelines Up to 10 smaller excavations totaling up to 0.14 acre as needed	Up to 0.09 acre per year	Up to 0.09 acre per year
Road Repair	Varies among years	Up to 1.0 acre per year	Up to 1.0 acre per year
Bank Stabilization	N/A	N/A	Up to 0.57 acre per year

Day-to-Day Inspection and Maintenance Activities

The majority of day-to-day inspection and maintenance activities performed under the program would consist of non-ground-disturbing external inspections and internal inspections. These consist of vehicle and on-foot access to program infrastructure, external and internal pipeline inspections, and maintenance within existing vaults. The majority of these activities would not result in effects on natural habitats and biological resources such as ground disturbance, vegetation removal, the conversion of land cover types, the use of heavy equipment, or work in sensitive and regulated habitats.

Off-Road Access

Existing roadways and disturbed areas are used for access to the greatest extent possible, where they are available. However, off-road access would be often necessary to access program activity areas. The number of off-road access points per pipeline varies from 0 to about 15. Off-road access routes are 15 feet wide and vary in length from a few feet to up to about 1 mile. Routes more than a few hundred feet long are limited to a few locations along rural pipelines such as the Santa Clara Conduit and Pacheco Conduit. Off-road access may be used for both day-to-day inspection and maintenance activities, and larger program-covered construction activities. Access points and routes are determined by equipment types and a number of other factors, and the closest access point may not always be used.

Off-road access into riparian corridors may be necessary to access a pipeline dewatering sites or other instream infrastructure. Access routes would be 15 feet wide and up to 50 feet long (750 square feet, or 0.02 acre). Workers and vehicles may cause disturbance by trimming back overgrown vegetation or removing trees from the dewatering site and/or surrounding area and installing BMPs (flow dissipation devices, etc.). At most, three locations along a given pipeline would require some vehicle or equipment and worker presence in the riparian corridor (up to 2,250 square feet, or 0.05 acre/pipeline).

Some access to pipeline structures may be required through wetlands and riparian areas, especially near creeks, potentially requiring the removal of riparian trees, the removal of riparian and wetland vegetation, and/or the installation of temporary ramps. Access may require removing or crushing a limited amount of wetland vegetation. Affected areas would be approximately 10 feet wide by the width of the channel. Temporary mats would be placed in areas where vehicles must cross drainages.

Setup and Staging

Staging would occur in disturbed upland areas to the greatest extent feasible, such as along roads or in existing parking lots. Most off-road staging areas would be approximately 25 feet by 25 feet (625 square feet, or 0.01 acre). On occasions when larger staging areas are needed to accommodate equipment such as cranes or large trucks, off-road staging areas are limited to a maximum of 100 feet by 100 feet (10,000 square feet, or 0.23 acre). An estimated 0 to 20 off-road staging areas would be required annually to support the program.

Pipeline Dewatering

This analysis conservatively assumes that up to five pipelines could require major maintenance per year (requiring pipeline draining): one raw water pipeline in each rural and urban areas, and three treated water pipelines in urban areas.

Inspection- and maintenance-driven shutdowns would preferentially be performed during the winter for pipelines that provide direct augmented streamflow. Assuming normal precipitation, natural rainy-season flows are expected to sustain stream flows during this period. The quality of water from raw water pipelines is as good as or better than the quality of the receiving water.

Most dewatering sites are located within stream banks where water would be released directly into the stream, or drain to stormwater conduits that then drain to the stream. However, draining pipelines for maintenance could involve some overland water flow in riparian corridors. Several pump-out stations (intermediate points to drain water along a pipeline by active pumping) could also drain into wetland areas adjacent to creeks.

The installation of erosion control measures such as visqueen spillways by Valley Water could require placement of materials around dewatering sites in riparian areas about 15 feet wide by up to 100 feet long (1,500 square feet, or 0.03 acre) at all necessary pipeline dewatering and release points per pipeline where existing infrastructure (e.g., rip-rap spillways) is absent or existing infrastructure is present but determined by a biologist to be inadequate to prevent erosion. Such temporary measures would be removed following completion of the program activity. The installation of visqueen spillways and other erosion control BMPs would not be considered a temporary impact; however, the removal of vegetation to support the installation of these materials would be considered a temporary or permanent impact, as appropriate.

Excavation

Excavation of pipeline infrastructure within upland areas could occur along up to 1 linear mile of up to four pipelines annually; such excavations would be 25 feet wide for a total of 132,000 square feet or 3.03 acres per pipeline, or 12.12 acres for up to four pipelines. The program could also include excavations at specific locations along pipelines with areas up to about 25 feet by 25 feet in size (625 square feet, or 0.01 acre). Up to 10 specific excavations would occur annually, for a total of 6,250 square feet or 0.14 acre). Trees are often removed in conjunction with excavation (e.g., to accommodate equipment). It is expected that the total area of excavations in most years would be less than 1 acre, and that only up to one pipeline per year would be located in undisturbed area. All areas where excavations would occur have been excavated previously when the pipeline was initially installed and for any subsequent maintenance. Excavations are typically 5-20 feet below the surface, with occasional additional excavation of 2–10 feet below the pipeline, when needed.

Excavation in riparian habitats could occur in support of the repair of pipelines, vaults, and appurtenances within the bed and banks of streams, in support of bank stabilization, and for placement of any flow dissipation BMPs. The extent of excavation in the riparian corridor would be up to 900 square feet or 0.02 acre of riparian excavation per valve, plus an additional 17,424 square feet or 0.4 acre for staging and access, for a total of 27,324 square feet or 0.6 acre per year program-wide. It is expected that the total area of excavations in riparian habitat by the program in most years would be less than the maximum of 0.6 acres. However, there is a small possibility that three pipelines that are within or in close proximity to riparian corridors (e.g., Santa Clara Conduit, Pacheco Conduit, Cross Valley Pipeline, and Almaden Valley Pipeline) would be repaired in the same year, which could raise the annual riparian impact area for that year to approximately 1.0 acre.

Excavation in support of the repair of up to three dewatering sites located within the ordinary high water marks of a stream may occur per year. The excavation area would be up to 25 feet by

50 feet, for a maximum of 1,250 square feet or 0.03 acre of riparian excavation per stream, and a total of 3,750 square feet or 0.09 acre per year. It is expected that the total area of excavations in riparian habitat in most would be less than the maximum of 0.09 acre.

Road Repair

Some access roads cross riparian corridors to reach dewatering sites and vaults located adjacent to streams. The program includes repair of these roads, which could have some impacts on the riparian corridors. Impacts could include vegetation removal and some placement of base material into the riparian corridor. The potential area is expected to be less than 1 acre per year for all pipelines. Because these impacts would occur within the footprint of existing access roads, it is assumed that the removal of riparian vegetation necessary to repair any roadways would be limited.

Road and/or levee reconstruction or repair could potentially require placement of gravel base or other materials at roads or levees located within or adjacent to a jurisdictional wetland (most likely a seasonal wetland area). Total fill into wetlands for access road repair is expected to be less than 1 acre per year. Some years may require no fill into wetlands or a very small fraction of an acre of fill. Because these impacts would occur within the footprint of existing access roads, it is assumed that the fill of wetlands necessary to repair any roadways would be limited.

Bank Stabilization

Permanent bank stabilization and erosion control measures may be implemented within the ordinary high water mark of streams to repair banks around dewatering sites or pump-out points prior to releasing water. Each stabilization would be up to 200 linear feet (100 linear feet upstream and downstream of the project) on each side of the channel by up to 10 feet high/deep for a total of 12,000 square foot maximum area. Up to five bank stabilizations would occur per year for a total of 1.38 acre of impact. The stabilization would be performed in the dry season.

Bank stabilization methods within the Guadalupe River, Stevens Creek, and Coyote Creek watersheds would comply with requirements of the *Settlement Agreement Regarding Water Rights of the Santa Clara Valley Water District on Coyote, Guadalupe, and Stevens Creeks* to maintain or enhance geomorphic functions, riparian conditions, and fish habitat. In all streams, structures such as jacks, lunkers, rock-filled gabions, rock work, and crib walls would be used if necessary to rebuild a stream bank and offer stability until riparian vegetation is established.

Compensatory Mitigation Approach

Similar to the 2007 PMP, compensatory mitigation for biological resource impacts of the updated PMP is expected to be needed only infrequently. To quantify the required amount of compensatory mitigation, Valley Water would quantify program impacts on biological resources, such as the acreage of impacts to wetlands and riparian habitats, sensitive communities, and special-status species' habitats, as work is performed. These impact calculations would then be used as the basis for determining compensatory mitigation to be provided.

Valley Water would compensate for program impacts on biological resources via the following location- and/or activity-based strategies:

- In Santa Clara County, the majority of program impacts would be covered by the VHP. Valley Water's payment of VHP impact fees would contribute to the VHP's vast conservation program, which includes the protection, enhancement, restoration, and management of a variety of sensitive and regionally abundant habitats, as well as habitat supporting VHP-covered plant and animal species as well as numerous other species. Santa Clara County portions of the program area located outside of the current VHP permit area are expected to be covered under the VHP if and when the VHP amendment is approved, likely in or around 2026.
- Program impacts within San Benito County may be covered under the SBCCP in the future, at which time impacts would be mitigated via the payment of SBCCP fees and compliance with SBCCP conditions. Like the VHP, the SBCCP would have a vast conservation strategy, and Valley Water's payment of SBCCP impact fees would contribute to that conservation strategy, thereby offsetting program impacts on SBCCP-covered species and habitats (as well as a number of species and habitats that would not be explicitly covered by the SBCCP).
- Certain program activities would not be covered under the VHP, SBCCP, or any other HCP, including:
  - In Santa Clara County: herbicide application, impacts on fish, and all activities that occur outside of the current VHP permit area unless and until the VHP permit area is expanded to include all program areas within the county
  - All program activities in Merced County
  - All program activities in San Benito County, unless and until the SBCCP is approved and explicitly covers those activities in the future

Impacts of program activities on rare species or habitats that are not covered under an HCP at the time those activities occur would be mitigated on an as-needed basis according to mitigation methods and ratios described for individual impacts below.

Significance Criteria

The impacts of the program on biological resources would be considered significant if they would result in any of the following:

- **Impact BIO-1:** 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.
- **Impact BIO-2**: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

- **Impact BIO-3:** 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.
- **Impact BIO-4**: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- **Impact BIO-5**: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- **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.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. These BMP conditions are included as part of the program, and the impact analyses were conducted assuming application of these practices and conditions. The following BMPs related to biological resources from Valley Water's Best Management Practices Handbook are applicable to the program:

- **BMP BI-3:** Remove Temporary Fills
- **BMP BI-4:** Minimize Adverse Effects of Pesticides on Non-Target Species
- **BMP BI-5:** Avoid Impacts to Nesting Migratory Birds
- **BMP BI-6:** Avoid Impacts to Nesting Migratory Birds from Pending Construction
- **BMP BI-7:** Minimize Impacts to Vegetation from Survey Work
- **BMP BI-8:** Choose Local Ecotypes of Native Plants and Appropriate Erosion-Control Seed Mixes
- **BMP BI-9:** Restore Riffle/Pool Configuration of Channel Bottom
- **BMP BI-10:** Avoid Animal Entry and Entrapment
- **BMP BI-11:** Minimize Predator Attraction
- **BMP WQ-1:** Conduct Work from Top of Bank
- **BMP WQ-2**: Evaluate Use of Wheel and Track-Mounted Vehicles in Stream Bottoms
- **BMP WQ-3:** Limit Impact of Pump and Generator Operation and Maintenance
- **BMP WQ-4:** Limit Impacts from Staging and Stockpiling Materials
- **BMP WQ-5:** Stabilize Construction Entrances and Exits
- **BMP WQ-6:** Limit Impact of Concrete Near Waterways
- **BMP WQ-8:** Minimize Hardscape in Bank Protection Design
- **BMP WQ-9:** Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
- **BMP WQ-10:** Prevent Scour Downstream of Sediment Removal

- **BMP WQ-11:** Maintain Clean Conditions at Work Sites
- **BMP WQ-15:** Prevent Water Pollution
- **BMP WQ-16:** Prevent Stormwater Pollution
- **BMP WQ-17:** Manage Sanitary and Septic Waste
- **BMP HM-7:** Restrict Vehicle and Equipment Cleaning to Appropriate Locations
- **BMP HM-8:** Ensure Proper Vehicle and Equipment Fueling and Maintenance
- **BMP HM-9:** Ensure Proper Hazardous Materials Management
- **BMP HM-10:** Utilize Spill Prevention Measures

Program-Specific Avoidance and Minimization Measures

As described in Chapter 2, Project Description, Valley Water would implement specific AMMs as part of the program to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to biological resources are provided in Table 3.3-4.

Table 3.3-4. Biological Resources-Related AMMs

AMM No.	AMM Requirements
AMM HYD-1	**Stormwater Control and Pollution Prevention.** To prevent stormwater pollution, the applicable measures from the following list will be implemented: 1. Where practicable, maintain a vegetated buffer strip between staging/excavation areas and receiving waters in accordance with recommendations laid out in the California Stormwater Quality Association handbook: 50 feet plus four times the percent slope of the land measured between the road and top of bank. [Source: CASQA 2019] 2. Soils exposed due to program activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. In creeks, the channel bed and areas below the Ordinary High Water Mark are exempt from this AMM. 3. The preference for erosion control fabrics will be to consist of natural fibers; however, upland 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. 4. Erosion control measures will be installed according to manufacturer's specifications. 5. To prevent stormwater pollution, the appropriate measures from, but not limited to, the following list will be implemented: – Silt Fences – Straw Bale Barriers – Brush or Rock Filters – Storm Drain Inlet Protection – Sediment Traps or Sediment Basins – Erosion Control Blankets and/or Mats

AMM No.	AMM Requirements
	– Soil Stabilization (i.e. tackified straw with seed, etc.) – Straw mulch. 6. All temporary construction-related erosion control methods shall be removed at the completion of the program activity (e.g. silt fences).
AMM HYD-3	**Erosion Control Plan.** Prior to any ground disturbing work Valley Water shall prepare an Erosion Control Plan. At a minimum, the plan shall include: • A proposed schedule of grading activities • Identification of any critical areas of high erodibility potential and/or unstable slopes and sensitive habitat areas. • Contour and spot elevations indicating runoff patterns before and after grading • Identification of erosion control measures on slopes, lots, and streets. Measures will be based on recommendations contained Santa Clara Valley Urban Runoff Pollution Prevention Program [2016], which directs practitioners to the most up-to-date California Stormwater Quality Association construction BMP manual. • Soil stabilization techniques such as short-term biodegradable erosion control blankets and hydroseeding
AMM HYD-4	**Consider Water Release Volume Reduction Options.** Water release volume reduction options (such as performing program activities with partially full pipelines, employing sectioning valves, and/or opportunities for reuse of water) will be considered prior to draining the pipeline.
AMM HYD-5	**Flow Diversion Measure Implementation.** Where practicable, flows will be diverted around actively eroding areas, or areas that may erode when subjected to release flows in order to avoid the following: damage to Valley Water property or adjacent property; threats to public safety; in-channel sedimentation and/or water quality concerns or other beneficial uses such as riparian habitat or recreation. Flow diversion methods might include use of flexible piping and/or placement of gravel bags to alter flow direction, or equivalent measures. The new flow path and release point will be monitored for signs of erosion.
AMM HYD-6	**Erosion Control and Dewatering Design.** To protect exposed soil and vegetated surfaces from erosion, existing adequate hard infrastructure (e.g., concrete, quick setting concrete, or rip rap spillways and bubblers/dissipators) or temporary dewatering measures (e.g., visqueen spillways), shall be used for all water releases. Visqueen spillway design can include a wattle or gravel bag perimeter with a temporary hose that terminates into a geotextile bag to dissipate flows and filter out sediments or debris that may be in a pipeline. Water releases will not occur directly over soil which may erode into receiving watercourses or directly to receiving watercourse in such a way that erosion could occur at the release point.

AMM No.	AMM Requirements
AMM HYD-7	**Monitor Receiving Waters.** During releases, receiving water will be monitored by a trained individual for temperature, dissolved oxygen, turbidity, and pH to ensure that applicable Basin Plan (Central Coast Basin or San Francisco Bay Basin) standards are not exceeded and as required by in the Statewide Discharge Permit (No. 4FW062) Monitoring locations, frequency and reporting will be performed in the receiving water in accordance with the Statewide Discharge Permit requirements. Monitoring will take place immediately prior to the release and periodically through the release. If at any time monitoring indicates standards are being exceeded, the release will be halted to determine the reason for exceedance and adjustments would be made to ensure that standards are not exceeded. Data shall be reported to the State Water Quality Control Board as required by the Statewide Discharge Permit (No. 4FW062).
AMM HYD-8	**Monitor Chlorine and Ammonia Levels for Water Releases from Treated Water Pipelines.** For treated pipelines, chlorine and ammonia levels in both the released water and receiving water will be monitored by a trained individual to verify that no residual disinfection chemicals remain in excess of standards established in the applicable Basin Plan (Central Coast Basin or San Francisco Bay Basin) and as required by in the Statewide Discharge Permit (No. 4FW062). Monitoring locations, frequency and reporting will be performed in the receiving water in accordance with the Statewide Discharge Permit requirements. Monitoring will take place immediately prior to the release and periodically through the release. If at any time monitoring indicates standards are being exceeded, the release will be halted to determine the reason for exceedance and adjustments would be made to ensure that standards are not exceeded. Data shall be reported to the State Water Quality Control Board as required by the Statewide Discharge Permit (No. 4FW062)
AMM HYD-9	**Erosion Control and Monitoring.** The release location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, releases will be terminated until appropriate erosion control BMPs are installed. Monitoring will be conducted just before the start of the release and regularly (e.g., every hour, every 4 hours, daily) during the release. The monitoring frequency will depend on site conditions and the nature of the release.
AMM HYD-10	**Inspection and Restoration of Eroded Areas.** An environmental monitor will walk along each release drainage 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures shall be taken to correct the erosion, if necessary. Correction measures may include installation of soil stabilization measures (e.g., wattles), hydroseeding, and/or recontouring the land to its previous state.
AMM HYD-11	**Prevent Releases to Water Bodies at Flood Stage.** Valley Water shall not release water to any natural water body approaching flood stage, nor will Valley Water release water to a natural waterbody during a prolonged precipitation event in which the additional flows may put the waterbody in to flood stage.

AMM No.	AMM Requirements
AMM HAZ-1	**Aquatic Protection from Hazardous Wastes.** Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that may be hazardous to aquatic life will be prevented from contaminating the soil and/or entering waters of the State. Any of these materials, placed within or where they may enter a stream or lake, will be removed immediately.
AMM HAZ-2	**Secondary Containment and Storage.** All chemicals that are stored in staging areas will be stored in secondary containment capable of containing 110 percent of the primary container. Proper storage and security will be implemented so that chemicals are not spilled or vandalized during non-working hours.
AMM HAZ-3	**Equipment and Fluid Storage.** Valley Water will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels. All equipment will be stored in a secure area, away from any channel. Between October 15 and April 15 (and depending on rain patterns, possibly before and after these dates as well), all equipment fluid storage areas will be provided with an impermeable cover, to prevent contact with stormwater.
AMM BIO-1	**Biologist Review.** Prior to the start of program activities, a qualified biologist will use Valley Water's GIS database, the CNDDB, VHP data, and/or other suitable tools to identify potential special-status species, suitable habitat for special-status species, and sensitive habitats within or near work areas. The biologist will also work with Valley Water crews to determine the nature and extent of the proposed activity. Based on these combined factors, the biologist will determine measures including BMPs, VHP conditions, program-specific AMMs, and CEQA Mitigation Measures to minimize impacts on these resources.
AMM BIO-2	**Employee/Contractor Training.** All appropriate Valley Water staff and contractors will receive annual training on BMPs, VHP Conditions, and CEQA Mitigation Measures that pertain to the protection of biological resources. The training will also include an overview of special-status species identification and habitat requirements
AMM BIO-3	**Adhere to Pesticide Injunction Requirements.** The requirements of applicable federal injunctions (i.e., the 2014 Salmonid Injunction, 2010 Bay Area Listed Species Injunction, and 2006 California Red-Legged Frog Injunction, and any updates thereof) will be adhered to.
AMM BIO-4	**Prevention of Spread or Mobilization of Plant Pathogens and Invasive Plants.** To prevent the spread/introduction of non-native invasive plant species, plant pathogens such as sudden oak death syndrome (*Phytophthora ramorum*), other soil-based *Phytophthora* species, and chytrid fungus, the following procedures will be implemented: • The number of vehicles and equipment will be minimized to the extent feasible. • Vehicular travel will be limited to established access roads and trails to the extent feasible . • Heavy equipment (e.g., excavators, drill rigs, track mounted rigs), vehicles, and large tools must be cleaned (i.e., thoroughly washed) and free of soil and debris prior to entering the study area from outside locations (i.e., arriving from other projects). Vehicles that only travel and park on paved roads do not require external cleaning.

AMM No.	AMM Requirements
	• The interior of vehicles and heavy equipment will be free of dirt/debris and other potentially contaminated materials. Interiors should be vacuumed, washed, and/or treated with sanitizing agents to minimize the introduction of invasive plants and pathogens. The exterior of large equipment such as bucket loaders, tracks or wheels, undercarriage, and anything that accumulates soil and debris should be thoroughly cleaned. • Spray bottles containing either 70 to 90 percent ethyl/isopropyl alcohol or a solution containing a 1:20 bleach-to-water ratio and boot brushes or hoof picks will be present at all entry points for personnel to decontaminate their shoes, small tools, and other equipment prior to entering the study area when arriving from outside locations (i.e., arriving from other projects or areas outside of the PREP region). The spray will be liberally applied (i.e., until thoroughly soaked) to all small equipment and tools (e.g., shovels, screens, boots) and allowed to air dry prior to entry. In addition, to minimize the potential for introduction or spread of *Phytophthora* during revegetation work, container stock used at revegetation sites will be sourced from approved nurseries and will be installed in compliance with the latest guidance at www.Calphytos.org, which include the Guidelines to Minimize *Phytophthora* Pathogens in Restoration Nurseries (Working Group for *Phytophthoras* in Native Habitats, 2016a), Guidance for Plant Pathogen Prevention when Working at Contaminated Restoration Sites or Sites with Rare Plants and Sensitive Habitat (Working Group for *Phytophthoras* in Native Habitats 2016b), and Guidelines to Minimize Phytophthora Contamination in Restoration Projects (Working Group for *Phytophthoras* in Native Habitats 2016c) . Valley Water may adopt newer guidelines as they become available.
AMM BIO-5	**Aquatic Invasive Species Decontamination.** The most current guidance on equipment decontamination and sanitization to prevent the spread of aquatic invasive species into sensitive waterways (including ponds, creeks, rivers, wetlands, and reservoir) will be adhered to.
AMM BIO-6	**Release Rates.** Release rates will be ramped up slowly in the beginning of dewatering and down slowly towards the end of dewatering to reduce the risk of negative impacts to aquatic species and so that the changes in flow rates in the receiving waters can be monitored for adverse conditions, and corrective actions can be taken.
AMM BIO-7	**Additional Protection of Nesting Birds**. If an active nest is identified during the surveys performed in compliance with BMP BI-5, an appropriate no-disturbance buffer (determined by the qualified biologist) to protect the nest shall be delineated and enforced. Buffers shall remain in place until the qualified biologist determines the nest is inactive.
AMM BIO-8	**Work Windows for Salmonid Streams.** Program activities involving ground disturbance typically will be conducted in the bed and banks of salmonid streams between June 15 and October 15.
AMM BIO-9	**Herbicide Application in Sensitive Habitats.** Valley Water will avoid applying herbicides within sensitive serpentine, riparian, and wetland habitats, and within habitat for listed wildlife species where mitigation for impacts would be required, throughout the program area. If vegetation maintenance is needed within these areas, mechanical methods will be used.

AMM No.	AMM Requirements
AMM AIR-1	Program activities will be conducted in accordance with current BAAQMD guidance regarding construction-related fugitive dust emissions. The following measures comprise construction BMPs from the 2022 BAAQMD CEQA Air Quality Guidelines: 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 will be prohibited. 4. All vehicle speeds on unpaved roads will be limited to 15 miles per hour. 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. All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph. 7. All trucks and equipment, including their tires, will be washed off prior to leaving the site. 8. Unpaved roads providing access to sites located 100 feet or further from a paved road will be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. Publicly visible signs will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number will also be visible to ensure compliance with applicable regulations.

Santa Clara Valley Habitat Plan and San Benito County Conservation Plan Conditions

As described under Section 3.3.2, Regulatory Setting, most of the program area is currently located within the VHP permit area, and PMP activities are explicitly included as covered activities under the VHP (ICF International 2012). In addition, under an amendment that is expected to be approved in 2026, the VHP permit area is being expanded to include all PMP activities within Santa Clara County.

The VHP is both an HCP and NCCP. The planning document helps private and public entities plan and conduct projects and activities in ways that lessen impacts on natural resources, including specific threatened and endangered species. The VHP identifies regional lands (called reserves) to be preserved or restored to the benefit of at-risk species, and describes how reserves are managed and monitored to ensure that they benefit those species. In providing a long-term, coordinated planning for habitat restoration and conservation, the VHP aims to enhance the viability of threatened and endangered species throughout the Santa Clara Valley.

As an NCCP, the VHP fulfills the requirements of the California Natural Community Conservation Planning Act, which requires both contribution to the recovery of listed species and the preservation of natural communities at the ecosystem scale (ICF International 2012). As such, the VHP goes above and beyond addressing project-specific impacts and mitigation by providing a higher level of in-perpetuity conservation of plant and animal species and their habitats at an ecosystem level. The VHP's reserve system provides comprehensive ecosystem conservation for a wide range of natural resources and benefits numerous Santa Clara County plant and animal species and their habitats. Thus, although permits issued under the VHP name specific species (i.e., "covered species"), which are either listed as threatened or endangered or may be listed in the future during the permit term, the VHP contributes to the conservation of entire communities of common and rare plant and wildlife species and their habitats in Santa Clara County.

The VHP defines measures to avoid, minimize, and mitigate impacts on covered species and their habitats while allowing for the implementation of certain *covered projects*. Chapter 6 of the VHP includes detailed and comprehensive conditions to avoid and minimize impacts on the 18 "covered species" (nine animal species and nine plant species) included in the plan area, which consists of 519,506 acres, or approximately 62 percent of Santa Clara County. These conditions are designed to achieve the following objectives:

- provide avoidance of certain covered species during implementation of covered activities throughout the project site;
- prevent take of individuals of certain covered species from covered activities as prohibited by law (e.g., take of fully protected species);
- minimize impacts on natural communities and covered species where conservation actions will take place; and
- avoid and minimize impacts on jurisdictional wetlands and waters throughout the study area to facilitate project-by-project wetland permitting.

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, and to implement conservation measures specified by the VHP. 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 exception of the burrowing owl). The Habitat Agency has mapped the following three fee zones in the VHP area: (1) ranchland and natural lands, (2), agricultural and valley floor lands, and (3) small vacant sites (Habitat Agency 2024). The following areas are exempt from land cover fees:

- all development that occurs on land mapped by the VHP as urban-suburban, landfill, reservoir (excluding dams), or agriculture developed land cover types;
- urban development in Fee Zones A–C on parcels less than 0.5 acre;
- additions to structures within 50 feet of an existing structure that result in less than 5,000 feet of impervious surface so long as there is no effect on wetland or serpentine land cover types; and
- construction of recreational facilities within the reserve system.

Additional fees in-lieu of providing compensatory mitigation are imposed for projects that impact serpentine habitat, wetlands, and burrowing owls, and for certain projects (not including the program, by definition) that result in atmospheric nitrogen emissions, although in some cases, project proponents may provide land to restore or create habitats protected by the VHP in lieu of payment of fees.

The impact analysis in Section 3.3.4 was conducted assuming the application of VHP conditions for covered program activities within the VHP permit area. The VHP conditions applicable to biological resources are provided in Table 3.3-5.

Table 3.3-5 VHP Conditions Applicable to Biological Resources

Condition No.	VHP Condition
Condition 1	Avoid Direct Impacts on Legally Protected Plant and Wildlife Species
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality
Condition 4	Avoidance and Minimization for In-Stream Projects
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance
Condition 7	Rural Development Design and Construction Requirements
Condition 8	Implement Avoidance and Minimization Measures for Rural Road Maintenance
Condition 11	Stream and Riparian Setbacks
Condition 12	Wetland and Pond Avoidance and Minimization
Condition 13	Serpentine and Associated Covered Species Avoidance and Minimization
Condition 14	Valley Oak and Blue Oak Woodland Avoidance and Minimization
Condition 15	Western Burrowing Owl
Condition 16	Least Bell's Vireo
Condition 17	Tricolored Blackbird
Condition 18	San Joaquin Kit Fox
Condition 19	Plant Salvage when Impacts are Unavoidable
Condition 20	Avoid and Minimize Impacts to Covered Plant Occurrences

Note: VHP Conditions 3, 4, and 5 require compliance with a suite of avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided Table 2.7-4 in Chapter 2.

In addition, the SBCCP is currently being developed, and Valley Water has requested that San Benito County provide coverage for PMP activities in northern San Benito County. If and when these portions of the program area are covered under the SBCCP, the program would implement applicable conditions of this HCP and NCCP to further reduce program impacts on covered special-status species.

The analysis in Section 3.3.4 does not assume the application of the forthcoming VHP amendment or the forthcoming SBCCP (i.e., it does not assume the application of VHP or SBCCP conditions for any program activities outside the current VHP permit area). Thus, any mitigation measures necessary to reduce impacts of program activities to less than significant levels under existing conditions (without the VHP amendment or adoption of the SBCCP) are identified in the impact analysis below. However, the following impact analyses also discuss that once the VHP amendment and/or SBCCP is adopted, Valley Water would comply with conditions of those plans in lieu of implementing the habitat/species-specific mitigation measures described below in order to reduce impacts on Plan-covered species or habitats resulting from Plan-covered activities.

3.3.4 Impact Analysis

Impact BIO-1: 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 (less than significant with mitigation incorporated)

Common tasks are needed to perform inspections and maintenance of PMP facilities. The categories of tasks that would have the potential to impact special-status species include the following:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Isolation, dewatering, and refilling
- Excavation, backfill, construction, and other ground disturbance
- Repair of pipelines system infrastructure

Impacts resulting from these tasks are discussed by special-status species type below.

Special-Status Plants (Impact BIO-1A)
Several special-status plant species are known to be present or could potentially occur in the program area, as discussed in Table 3.3-2 above. Special-status plant species identified in Table 3.3-2 with potential to occur in the program area include:

- Hoover's button-celery, San Joaquin spearscale, and prostrate vernal pool navarretia have been detected by Valley Water biologists within the program area.
- Congdon's tarplant, Mt. Hamilton thistle, smooth lessingia, spiny-sepaled button-celery, saline clover, and Hall's bush-mallow are known from several locations in the program area vicinity and can occur within and adjacent to program work areas.
- Santa Clara Valley dudleya, Metcalf Canyon jewel-flower, big-scale balsamroot, pink creamsacs, Hospital Canyon larkspur, fragrant fritillary, phlox-leaf

serpentine bedstraw, Loma Prieta hoita, woodland woollythreads, and most beautiful jewel-flower are unlikely to occur in the program area itself due to a lack of known records in the vicinity or because the species' occurrences are localized in areas where program activities would not occur. However, suitable habitat for these species is present within program work areas, and the possibility that program activities would impact individuals cannot be ruled out.

There is potential for additional special-status plant species that are listed as CRPR 1, 2, 3, or 4 by CNPS to be discovered in the program area in the future, and program activities would have the potential to impact those species as well. Program impacts within natural areas, including areas potentially supporting special-status plants, would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach in conducting PMP activities (e.g., previously disturbed areas would be prioritized for staging and parking, preferred access routes would clearly defined to avoid sensitive resources, equipment would be mounted on trucks, appurtenances may be abandoned in-place [rather than excavated and removed] to minimize ground disturbance, and no work would occur along buried sections of tunnels as part of the program). Nevertheless, PMP activities may impact special-status plants through direct or indirect disturbance of individuals and populations as well as disturbance, modification, or destruction of suitable habitat.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and limited scale maintenance activities that would have little to no impacts on biological resources, including special-status plants. The potential for special-status plants to be impacted by other program activities is described below.

Ground Disturbance and Vegetation Removal

Ground disturbance and vegetation removal 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 existing natural areas are replaced with new infrastructure or hard materials (e.g., rock base or concrete) and not revegetated following the completion of work. Grading and the removal or redistribution of soil may also remove seed of special-status plant species from the work area. Project activities could introduce plant pathogens such as *Phytophthora* if equipment, tools, and PPE are not adequately decontaminated prior to work. BMP BI-7 would minimize impacts within vegetated areas, and BMP BI-8 requires a qualified biologist or vegetation specialist ensure that ecologically appropriate native seeding options are used, which would reduce the loss of habitat for special-status plants within temporary impact areas. AMMs BIO-1 and BIO-2 would ensure that activities with potential to affect special-status plants are identified; appropriate protective measures (i.e., BMPs, AMMs, VHP conditions, and CEQA Mitigation Measures) are implemented; and employees and contractors are trained on protective measures, special-status plant identification, and habitat requirements. AMM BIO-4 would prevent the spread or mobilization of plant pathogens such

as *Phytophthora*. Compliance with VHP Conditions 13, 19, and 20 would minimize program impacts on serpentine habitat and associated special-status plant species; give the Habitat Agency the option to salvage seed from VHP-covered special-status plants when impacts cannot be avoided; and require pre-activity surveys for VHP-covered special-status plant species and revision of the project design to avoid impacts, if feasible.

VHP-Covered Special-Status Plants

Of the 19 known special-status plant species that could be impacted by the program, seven species—Santa Clara Valley dudleya, Metcalf Canyon jewel-flower, Mt. Hamilton thistle, fragrant fritillary, Loma Prieta hoita, smooth lessingia, and most beautiful jewel-flower—are VHP-covered species. VHP impact fees paid by Valley Water for VHP-covered impacts on these covered species would contribute to the VHP's conservation program, which includes conservation, enhancement, and management of habitat for and populations of these species to offset impacts of VHP-covered activities. Impacts of VHP-covered activities on these species would be less than significant under CEQA with implementation of BMPs, program-specific AMMs, and applicable VHP conditions. These species occur in the program area only within the current VHP permit area, and thus, all program impacts on these species would be **less than significant**.

Non-VHP-Covered Special-Status Plants

Hall's Bush-mallow and Woodland Woollythreads

Hall's bush-mallow and woodland woollythreads are not covered under the VHP, although they occur within the VHP permit area and are proposed for addition as covered species via the VHP amendment currently in progress. As discussed under *Santa Clara Valley Habitat Plan and San Benito County Conservation Plan Conditions* above and in the EIR for the VHP (USFWS et al. 2012), as an NCCP the VHP's reserve system 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 states 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 would impact the species. In addition, woodland woollythreads is known to be present in multiple Habitat Agency reserves (Rottenborn, pers. obs. 2023), and this species occurs primarily on serpentine-influenced substrates that are targeted for enrollment into the VHP reserve system. As a result, VHP conservation activities are expected to have a benefit on this species that outweighs the adverse effects of the limited VHP-covered activities. The Habitat Agency's management of occupied habitat would enhance that habitat for Hall's bush-mallow and woodland woollythreads and ensure the long-term persistence of healthy

populations of these species. Based on the very limited extent of anticipated program impacts within suitable habitat for Hall's bush-mallow and woodland woollythreads, as well as the known occurrence and abundance of these 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 and woodland woollythreads by the Habitat Agency) would offset any minor impacts of the program on these species. Thus, with the implementation of BMPs and compliance with VHP conditions (including payment of VHP impact fees), impacts of VHP-covered program activities on Hall's bush-mallow and woodland woollythreads would be **less than significant**.

Although woodland woollythreads is not expected to be impacted by program activities outside of the current VHP permit area, Hall's bush-mallow could be impacted along the Pacheco Conduit in San Benito County or near the Pacheco Pumping Station in Merced County. Program-related impacts in these areas would not be covered under a habitat plan. The forthcoming SBCCP may eventually cover program impacts on Hall's bush-mallow; at that time, Valley Water's compliance with SBCCP conditions would reduce the impacts of SBCCP-covered program activities on this species.

Additional Special-Status Plant Species

Conservation of big-scale balsamroot, pink creamsacs, Hospital Canyon larkspur, phlox-leaf serpentine bedstraw, Congdon's tarplant, spiny-sepaled button-celery, prostrate vernal pool navarretia, saline clover, Hoover's button-celery, San Joaquin spearscale, and Hall's bush-mallow (all of which are CRPR 1B species), as well as any additional CRPR 1–4 species that may be detected in the program 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 impacts that could lead to the extirpation of a population could reduce that species' range or lead to the loss of important genetic diversity, which would be considered a substantial adverse effect. 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). 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, and 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). Impacts to 10 percent or less of a population of CRPR 1–4 species would not be expected to cause the extirpation of such a population as long as the remaining plants are avoided and protected. However, because impacts to more than 10 percent of a population of CRPR 1–4 species 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, Valley Water has conservatively determined that program

impacts on more than 10 percent of a population (by individuals or occupied area) constitute a significant impact.

The remaining special-status plant species that could be impacted by program activities, including any species that are not currently known or expected to occur but that may be detected within the program 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 impacts. Although reserves (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 and woodland woollythreads, 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 area in the future, that is sufficient to offset the program's impacts, and residual impacts would remain due to potential direct and indirect effects of both VHP-covered and non-VHP-covered activities on these special-status plant species.

Hospital Canyon larkspur, Hoover's button-celery, spiny-sepaled button-celery, San Joaquin spearscale, Hall's bush-mallow, prostrate vernal pool navarretia, saline clover, and any additional CRPR 1–4 species that may be detected in the program area in the future could be impacted in the San Benito County portion of the program area. Impacts on these species would be **significant** in the absence of mitigation measures. Hoover's button-celery is included in a preliminary list of species that may be covered by the forthcoming SBCCP (ICF 2023) ; if the SBCCP is adopted and covers this species, Valley Water's compliance with SBCCP conditions would reduce the impacts of SBCCP-covered program activities on this species.

Hospital Canyon larkspur and spiny-sepaled button-celery, as well as any additional CRPR 1–4 species that may be detected in the program area in the future, could occur in Merced County portions of the program area. Impacts on these species would be **significant**.

Fugitive Dust

Mobilization of dust could indirectly impact 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. Implementation of AMM AIR-1 would require Valley Water or its contractors to follow current BAAQMD guidance regarding construction-related fugitive dust emissions, including watering exposed surfaces, use of wet power vacuum street sweepers to clean public roads, and covering haul trucks transporting loose materials. These measures would ensure that impacts due to dust from work activities on nearby special-status plants would be minimized and the impact would be **less than significant**.

Invasive Species and Pathogens

Movement of earth, vegetation, water (e.g., runoff), equipment, vehicles, and personnel could spread invasive plant propagules and pathogens such as *Phytophthora*. 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. Implementation of BMP HM-7 would require that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites. Furthermore, implementation of AMM BIO-4 would require Valley Water or its contractors prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, minimizing work activities and vehicle use within natural areas, and complying with applicable guidelines related to *Phytophthora*. Compliance with required VHP conditions in VHP-covered program areas would also reduce potential spread of invasive plants and pathogens. Therefore, the potential for spreading invasive plants and pathogens would be minimized and the impact would be **less than significant**.

Use of Hazardous Materials

During on-site refueling of equipment, minor fuel and oil spills may occur, with a risk of larger releases. If spills are not immediately contained and cleaned up, these materials may kill or impair the health of special-status plants. During the program, Valley Water would implement its standard BMPs which include measures to ensure proper handling and containment of hazardous materials as well as proper cleanup procedures. BMP HM-8 requires that fueling be contained in a manner that any accidental spill would not come in direct contact with soil or surface water and regular cleaning and inspection of equipment. BMP HM-9 requires specific hazardous materials handling and storage, as well as clean up procedures. BMP HM-10 and compliance with required VHP conditions (in VHP-covered program areas) requires that spill prevention kits are in close proximity when using any hazardous materials and that field personnel are appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills. Furthermore, several program-specific AMMs would reduce the potential for any hazardous materials to impact special-status plants. These include AMM HAZ-1, which protects aquatic resources from hazardous waste, and AMM HAZ-2 and AMM HAZ-3, which requires that all construction-related chemicals be prevented from contaminating soil or water by properly securing the debris and storing it away from water channels, as well as by ensuring that any quantity of chemicals would have a secondary containment. Implementation of these measures, along with compliance with required VHP conditions in VHP-covered program areas, would minimize the potential for the spill of hazardous material to kill or impair the health of special-status plants. The impact would be **less than significant**.

Nitrogen Deposition

Indirect effects of program activities on serpentine-associated special-status plants can also 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. Nitrogen emitted by maintenance vehicles and equipment may impact any serpentine-associated special-status plants growing within or downwind of areas where the nitrogen is emitted. Valley Water estimates an average of 67 daily vehicle trips would be necessary to support the program, inclusive of all VHP-covered and non-VHP covered

activities. There is some potential for nitrogen emitted by maintenance vehicles and equipment to contribute to cumulative nitrogen deposition impacts on special-status plants, especially those associated with serpentine substrates and communities. For VHP-covered activities (which include the majority of program activities), the VHP mitigates nitrogen deposition impacts via the payment of nitrogen deposition fees for new vehicle trips. Program activities would not be 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 activities are mitigated by the VHP even though the program's nature does not necessitate payment of VHP nitrogen deposition fees. As a result, impacts due to nitrogen deposition from VHP-covered program activities would be **less than significant**.

For non-VHP-covered activities, no impacts on serpentine habitats would occur outside of the current VHP permit area in Santa Clara County. Therefore, **no impact** related to nitrogen deposition would occur in these areas. In addition, such activities occurring in and outside of Santa Clara County would be limited and would therefore result in limited nitrogen emissions. As a result, any impacts due to nitrogen deposition from activities not covered under the VHP would be minimal, and the impact would be **less than significant**.

Use of Herbicides

Vegetation management activities in support of the program would include the application of herbicides. Off-target herbicide application and drift can result in the damage and mortality of special-status plant individuals or populations. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Impacts of herbicide use are not covered by the VHP. Implementation of BMP BI-4 and AMMs BIO-3 and BIO-9 would avoid potential direct and indirect effects of herbicides on special-status plants and ensure that herbicide application is avoided in sensitive habitats. Thus, no native herbaceous vegetation or sensitive habitat would be removed by herbicide application under the program. The impact of herbicide application on special-status plants would be **less than significant**.

Water Releases

The release of small volumes of water from vaults into natural upland areas, which would be extremely infrequent under the program, could result in very limited impacts on special-status plants. No releases of water into natural off-channel wetlands are anticipated; therefore, no impacts of such releases on special-status plants in wetlands would occur. These impacts would be **less than significant**.

Pipeline dewatering involves releases of larger volumes of water, potentially into natural upland areas. Such releases could potentially impact special-status plants, resulting in the loss or damage of special-status plants and destabilization of supporting soils, although such dewatering into natural uplands would be extremely infrequent under the program. No

releases of water into natural off-channel wetlands that could impact special-status plants in wetland are anticipated under the PMP; therefore, **no impact** would occur. To minimize erosion, Valley Water would implement BMPs WQ-9 and AMMs HYD-4, HYD-5, HYD-6, HYD-9, and HYD-10 throughout the program area and comply with required VHP conditions in VHP-covered program areas. Nevertheless, the loss or damage of special-status plants during pipeline dewatering could still occur and the resulting impact would be **significant**.

Overall Significance Determination for Impact BIO-1A
Significant

Mitigation for Impact BIO-1A
Following implementation of AMM-BIO-1 to determine whether special-status plants could occur in a given activity area and whether the planned activities would potentially result in impacts on special-status plants, Valley Water would implement Mitigation Measure (MM) BIO-1 through MM BIO-4 below to reduce impacts on special-status plant species for which the Habitat Agency's reserve system and/or SBCCP reserve system do not adequately offset impacts. These include big-scale balsamroot, pink creamsacs, Hospital Canyon larkspur, phlox-leaf serpentine bedstraw, Congdon's tarplant, spiny-sepaled button-celery, prostrate vernal pool navarretia, saline clover, Hoover's button-celery, San Joaquin spearscale, and Hall's bush-mallow (all of which are CRPR 1B species), as well as any additional CRPR 1–4 species that may be detected in the program area in the future.

If program activities in a given work area are covered under the forthcoming VHP amendment or the forthcoming SBCCP, and the plant species to be impacted are also covered, MM BIO-3 and MM BIO-4 below would not be needed to reduce impacts to less than significant levels under CEQA. Rather, the program will adhere to applicable habitat plan conditions to reduce impacts. MM BIO-1 (pre-activity surveys) and MM BIO-2 (avoidance buffers) would still be implemented to determine which plants may be present in the work area and would be impacted by the program, and to avoid impacts on these species where feasible.

> **MM BIO-1. Pre-Activity Surveys for Special-Status Plants.** This measure will be implemented regardless of habitat plan coverage of program activities.
>
> If a qualified biologist determines that known locations of big-scale balsamroot, pink creamsacs, Hospital Canyon larkspur, phlox-leaf serpentine bedstraw, Congdon's tarplant, spiny-sepaled button-celery, prostrate vernal pool navarretia, saline clover, Hoover's button-celery, San Joaquin spearscale, and Hall's bush-mallow (all of which are CRPR 1B species), as well as any additional CRPR 1–4 species that may be detected in the program area in the future and for which the Habitat Agency's reserve system and/or SBCCP reserve system do not adequately offset impacts, or suitable habitat for such plants, is potentially present within the work areas, protocol-level surveys within areas identified as suitable habitat will be conducted by a qualified biologist within two (2) years prior to commencement of work. Surveys will be conducted during the

appropriate time(s) of year (i.e., the target species' blooming period) to adequately identify the special-status plant(s) that could occur on the site of program activities.

MM BIO-2. Avoidance Buffers. This measure will be implemented for any program activity whose impacts on a special-status plant occurrence are not covered by the VHP or SBCCP.

To the extent feasible, and in consultation with a qualified biologist, Valley Water will design and construct all proposed activities to avoid all impacts on populations of big-scale balsamroot, pink creamsacs, Hospital Canyon larkspur, phlox-leaf serpentine bedstraw, Congdon's tarplant, spiny-sepaled button-celery, prostrate vernal pool navarretia, saline clover, Hoover's button-celery, and San Joaquin spearscale, as well as Hall's bush-mallow outside of the VHP permit area, and any other CRPR 1–4 plant species that may be detected in the future outside the VHP and SBCCP permit areas (once those boundaries are established) or for which the Habitat Agency's reserve system or SBCCP reserve system does not support sufficient populations to offset program impacts. Avoided special-status plant populations will be protected by establishing and observing a buffer between plant populations and the impact area; the dimensions of the buffer will be determined by a qualified biologist based on the work to be performed and how the activity might impact those plants. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around special-status plants to be avoided will be marked in the field (e.g., with flagging, fencing, paint, or other means appropriate for the site in question). This marking will be maintained intact and in good condition throughout work activities, and all maintenance personnel will be trained on the locations of these plants, how their locations and the surrounding buffer are marked, and how impacts on these plants are to be avoided. An appropriate buffer may also consist of timing of work activities to occur during plant dormancy and to avoid critical life history stages (such as flowering and fruiting).

If complete avoidance is not feasible and special-status plants will be impacted by the activity, MM BIO-3 shall be implemented. If more than 10 percent of a population (by occupied area or individuals) of the species listed above will be impacted by the activity as determined by a qualified plant ecologist, MM BIO-4 shall also be implemented.

MM BIO-3. Seed Collection and Storage. This measure will be implemented for any program activity whose impacts on a special-status plant occurrence are not covered by the VHP or SBCCP.

If any individual big-scale balsamroot, pink creamsacs, Hospital Canyon larkspur, phlox-leaf serpentine bedstraw, Congdon's tarplant, spiny-sepaled button-celery, prostrate vernal pool navarretia, saline clover, Hoover's button-celery, San Joaquin spearscale, and Hall's bush-mallow (all of which are CRPR 1B species), or additional CRPR 1–4 species that may be detected in the program area in the future and for which

the Habitat Agency's reserve system and/or SBCCP reserve system do not adequately offset impacts are impacted by program activities, 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.

MM BIO-4. Create or Enhance and Preserve Mitigation Populations. This measure will be implemented for any program activity whose impacts on a special-status plant occurrence are not covered by the VHP or SBCCP.

Compensatory mitigation will be provided if more than 10 percent of the population of big-scale balsamroot, pink creamsacs, Hospital Canyon larkspur, phlox-leaf serpentine bedstraw, Congdon's tarplant, spiny-sepaled button-celery, prostrate vernal pool navarretia, saline clover, Hoover's button-celery, or San Joaquin spearscale, or Hall's bush-mallow outside of the VHP permit area or SBCCP permit area (once those boundaries are established), or other CRPR 1–4 species that may be detected in the future outside the VHP permit area or SBCCP permit area (once those boundaries are established) or for which the Habitat Agency's reserve system or SBCCP reserve system does not support sufficient populations to offset program impacts, would be impacted. Compensatory mitigation will be provided by purchasing credits from an approved conservation bank at a 1:1 (mitigation: impact) ratio, or 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 to establish an entirely new population in suitable habitat.

If compensatory mitigation is required pursuant to the paragraph above, a habitat mitigation and monitoring plan (HMMP) will be developed by qualified plant or restoration ecologists 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 plant or restoration ecologist, 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.

Significance after Mitigation

Valley Water would implement MM BIO-1 and MM BIO-2, which would require pre-activity surveys as well as the establishment of avoidance buffers to avoid impacts to special-status plants detected during the surveys. Implementation of MM BIO-3 and MM BIO-4 would be required for any program activity whose impacts on a special-status plant occurrence are not covered by the VHP or SBCCP to ensure that appropriate restoration, enhancement, and/or preservation would occur if impacts to any special-status plant species cannot be avoided. Therefore, the program's direct and indirect impacts on special-status plants would be **less than significant with mitigation incorporated**.

Special-Status Invertebrates (Impact BIO-1B)

The monarch butterfly and Bay checkerspot butterfly are present in the program area vicinity, as discussed in Table 3.3-2. If they are listed under FESA and CESA (respectively), the large marble butterfly and Crotch's bumble bee are additional special-status invertebrate species that are present in the program area vicinity, as discussed in Table 3.3-2. Program impacts within natural areas, especially serpentine habitats potentially supporting the Bay checkerspot butterfly, would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach to program activities (e.g., previously disturbed areas would be prioritized for staging and parking, preferred access routes would clearly defined to avoid sensitive resources, equipment would be mounted on trucks, appurtenances may be abandoned in-place [rather than excavated and removed] to minimize ground disturbance, and no work would occur along buried sections of tunnels as part of the program). Nevertheless, program activities may impact special-status invertebrates through direct or indirect disturbance of

individuals and populations as well as disturbance, modification, or destruction of suitable habitat. The potential for special-status invertebrates to occur in the program area is as follows:

- The monarch butterfly forages on floral resources in open habitats throughout the program area, especially during spring and fall migration. This species is not known to form wintering roosts anywhere in the program area. Where milkweeds (*Asclepias* spp.) are present, individuals can potentially breed in program activity areas from approximately March through August, although the density of breeding individuals in areas where program activities occur is likely low, based on low densities of adults observed by H. T. Harvey and Valley Water biologists and the low densities of larvae observed in patches of milkweed in some parts of the program vicinity (Rottenborn, pers. obs., 2022). This species may occur in Santa Clara County within the portions of the program area that currently are and are not covered by the VHP, as well as in the San Benito and Merced County portions of the program area.
- The large marble butterfly forages on floral resources in open habitats throughout the program area during its flight season from approximately mid-April until June or early July. Where mustards (family Brassicaceae) are present, individuals can potentially breed in maintenance activity areas. In the program area vicinity, 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). Grasslands 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 they abut more natural areas that support extensive floral resources (e.g., along inland open habitats and parks).
- Crotch's bumble bee similarly forages on floral resources in open habitats throughout the program area during its flight season (approximately February-March to August-September). This species is believed to typically nest and overwinter in inactive small mammal burrows and crevices underground (Xerces Society 2018). Habitats in program activity areas that are most likely to be used by this species are within more natural areas that support extensive floral resources (e.g., within open habitats and parks). This species may occur in Santa Clara County within the portions of the program area that currently are and are not covered by the VHP, as well as in the San Benito and Merced County portions of the program area.
- The Bay checkerspot butterfly may be impacted by program activities that occur within serpentine habitats in the program area, especially where suitable host plants (i.e., dwarf plantain and purple owl's clover [*Castilleja exserta*]) are present. Adults of this species can be detected during its approximately six-week-long flight season that, with some interannual variability, falls within the period from approximately late February to early May. This species occurs in the program area only in portions of Santa Clara County currently covered by the VHP.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and limited maintenance activities that would have limited to no impact on biological resources, including special-status invertebrates. The potential for special-status invertebrates to be impacted by other program activities is described below.

Ground Disturbance and Vegetation Removal

Ground disturbance and vegetation removal may result in direct and indirect impacts on special-status invertebrates. These work activities can impact invertebrates by removing larval host plants and adult nectar and pollen sources; killing eggs, larvae, or pupae; and causing mortality or injury due to crushing by personnel or equipment. For bees, work activities could destroy subterranean nests and their occupants. In addition, invertebrate species may be adversely impacted by habitat conversion. Permanent loss of invertebrates and their habitat would occur where existing natural areas are replaced with new infrastructure or hard materials (e.g., rock base or concrete) and not revegetated following the completion of work. BMP BI-7 would minimize impacts within vegetated areas, and BMP BI-8 requires a qualified biologist or vegetation specialist to ensure that ecologically appropriate native seeding options are used, which would reduce the loss of habitat for special-status invertebrates within temporary impact areas. AMMs BIO-1 and BIO-2 would ensure that activities with potential to affect special-status invertebrates are identified; appropriate protective measures (i.e., BMPs, AMMs, VHP conditions, and CEQA Mitigation Measures) are implemented; and employees and contractors are trained on protective measures, special-status invertebrate identification, and habitat requirements. Because all program activities in serpentine habitat are covered under the VHP, compliance with VHP Condition 13 would minimize all program impacts on serpentine habitat and Bay checkerspot butterflies by requiring pre-activity surveys for Bay checkerspot butterflies and revision of the project design to avoid impacts to serpentine habitat, if feasible.

VHP-Covered Special-Status Invertebrates

The Bay checkerspot butterfly is covered under the VHP. VHP impact fees paid by Valley Water for VHP-covered impacts on this species and its habitat would contribute to the VHP's conservation program, which includes conservation, enhancement, and management of habitat for and populations of this species to offset impacts of VHP-covered activities. This species and its habitat occur in the program area only within the current VHP permit area, and thus, impacts of VHP-covered activities on this species would be **less than significant**.

Non-VHP-Covered Special-Status Invertebrates

The large marble butterfly, monarch butterfly, and Crotch's bumble bee are not covered under the VHP, although they occur within the VHP permit area and are proposed for addition as covered species via a VHP amendment in progress. However, these species would benefit from the VHP conservation program (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 under Impact BIO-1A above 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 reserve system will benefit these three 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), including milkweed; the large marble butterfly is similarly a generalist forager on mustards, which are widespread. VHP conservation lands are expected to support Crotch's bumble bee, large marble butterfly, and monarch 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, the VHP is expected to have a net benefit on the conservation of these species, and impacts would be **less than significant**. Similarly, the SBCCP would be expected to have a net benefit on the species regardless of whether they are covered, due their broad distribution. If the large marble butterfly and/or Crotch's bumble bee are not listed under FESA or CESA (respectively), all program impacts on these species and their habitat would be **less than significant**. Additional species-specific analyses are presented below.

Crotch's Bumble Bee

Crotch's bumble bee could be impacted by program activities occurring outside the current VHP permit area in Santa Clara County, along the Santa Clara Conduit in San Benito County, or near the Pacheco Pumping Station in Merced County. If the species is listed under CESA, the program's overall impacts due to the loss of individual Crotch's bumble bees, and particularly nests, within Santa Clara County outside of the current VHP coverage area, in San Benito County, and in Merced County would be **significant**. Because suitable breeding and foraging habitat for Crotch's bumble bee is extensively available in the program area vicinity, and implementation of the program is not expected to remove or degrade large areas of habitat such that regional populations of this species would be impacted, non-VHP-covered program impacts due to the loss or degradation of Crotch's bumble bee habitat would be **less than significant.** Regardless of habitat plan coverage, if the species is not listed under CESA, all program impacts on Crotch's bumble bee and its habitat would be **less than significant**.

Monarch Butterfly

The program's overall impacts due to the loss of individual monarch butterflies (particularly larvae on host plants) within Santa Clara County outside of the current VHP coverage area, in San Benito County, or in Merced County would be **significant**.

Because habitat for the monarch butterfly is extensively available in the program area vicinity, and implementation of the program is not expected to remove or degrade large areas of habitat such that regional populations of the species would be impacted, program impacts on habitat for the monarch butterfly would be **less than significant**.

Large Marble Butterfly
Because large marble butterfly populations are concentrated along natural areas on the periphery of the program area, program activities within natural areas would be limited, and the species utilizes common mustards for breeding (which are widespread in the program area), program activities are not expected to result in significant effects on local populations, and impacts of the program on individual large marble butterflies are **less than significant**, regardless of coverage under a habitat plan. Because breeding and foraging habitats for the large marble butterfly are extensively available in the program area vicinity, and implementation of the program is not expected to remove or degrade large areas of habitat such that regional populations of this species would be impacted, program impacts on these habitats are also considered **less than significant**.

Fugitive Dust
Mobilization of dust would indirectly impact special-status invertebrates and any host or nectar plants located immediately adjacent to or downwind from areas of earth-moving or equipment/vehicle activity. Dust may coat vegetative and floral surfaces of host plants, interfering with normal gas exchange, photosynthesis, or pollination. AMM AIR-1 would ensure that impacts due to dust from work activities on nearby host and nectar plants for special-status invertebrates are minimized. The impact would be **less than significant**.

Invasive Species and Pathogens
Movement of earth, vegetation, water (e.g., runoff), equipment, vehicles, and personnel could spread invasive plant propagules. Invasive plants could reduce habitat quality for special-status invertebrates, or directly impact the health of their host and nectar plants, in areas within and immediately outside impact areas. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading invasive plants between work sites. AMM BIO-4 would ensure that Valley Water personnel and contractors take measures to prevent the spread of invasive plants by washing and decontaminating vehicles and equipment and minimizing work activities and vehicle use within natural areas. Furthermore, compliance with required VHP conditions in VHP-covered program areas would also reduce potential spread of invasive plants and pathogens. The impact would be **less than significant**.

Use of Hazardous Materials
During the on-site refueling of equipment, minor fuel and oil spills may occur, with a risk of larger releases. Without rapid containment and clean up, these materials may kill or impair the health of special-status invertebrates as well as their host plants and/or nectar and pollen sources. As discussed under Impact BIO-1A, implementation of BMP HM-8, BMP HM-9, BMP HM-10 as well as AMM HAZ-2 and AMM HAZ-3 across the program area and compliance with required VHP conditions in VHP-covered program areas would minimize the potential for the spill of hazardous material that would kill or impair the health of special-status invertebrates and/or their host plants and nectar plants. The impact would be **less than significant**.

Nitrogen Deposition

Indirect effects of program activities on the Bay checkerspot butterfly and its host plants can also 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 that provide habitat for the Bay checkerspot butterfly. Nitrogen emitted by maintenance vehicles and equipment may impact serpentine habitats within or downwind of areas where the nitrogen is emitted. As discussed under Impact BIO-1A, Valley Water estimates an average of 67 daily vehicle trips would be necessary to support the program, inclusive of all VHP-covered and non-VHP covered activities. There is some potential for nitrogen emitted by maintenance vehicles and equipment to contribute to cumulative nitrogen deposition impacts on habitat for the Bay checkerspot butterfly. For VHP-covered activities (which include the majority of program 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, 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 activities are mitigated by the VHP even though the program's nature does not necessitate payment of VHP nitrogen deposition fees. As a result, impacts due to nitrogen deposition from VHP-covered program activities would be **less than significant**. For non-VHP-covered activities, no impacts on serpentine habitats would occur outside of the current VHP permit area in Santa Clara County. In addition, such activities occurring in and outside of Santa Clara County would be limited and would therefore result in limited nitrogen emissions. As a result, any impacts due to nitrogen deposition from activities not covered under the VHP would be minimal, and **less than significant**.

Use of Herbicides

Vegetation management activities in support of the program would include the application of herbicides. Off-target herbicide application and drift could impact the survival, reproduction, and growth of host and nectar plants that support special-status invertebrates. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Impacts of herbicide use are not covered by the VHP. Implementation of BMP BI-4, AMM BIO-3, and AMM BIO-9 would avoid potential direct and indirect effects of herbicides on host and nectar plants that support special-status invertebrates. Thus, no native herbaceous vegetation or sensitive habitat would be removed by herbicide application under the program. The impact of herbicide application on special-status invertebrates would be **less than significant**.

Water Releases
The release of small volumes of water from vaults into natural upland areas, which would be extremely infrequent under the program, can potentially result in very limited impacts on special-status invertebrates. As a result, these impacts would be **less than significant**.

Pipeline dewatering involves releases of larger volumes of water, potentially into natural upland areas. Such releases could potentially impact special-status invertebrates, their host plants, and nectar and pollen sources they rely on, although such releases into natural uplands would be extremely infrequent under the program. To minimize erosion, Valley Water would implement BMPs WQ-9 and AMMs HYD-4, HYD-5, HYD-6, HYD-9, and HYD-10throughout the program area and comply with required VHP conditions in VHP-covered program areas. Nevertheless, the loss of individual Crotch's bumble bees and/or monarch butterflies during pipeline dewatering could still occur and would be **significant**.

Overall Significance Determination for Impact BIO-1B
Significant

Mitigation for Impact BIO-1B
Following implementation of AMM-BIO-1 to determine whether monarch butterflies or Crotch's bumble bees could occur in a given activity area, and whether program activities would potentially result in impacts on special-status invertebrates, Valley Water will implement MMs BIO-5 and BIO-6 (for Crotch's bumble bees) and BIO-7 and BIO-8 (for monarch butterflies) below to reduce program impacts that are not covered under the VHP, and for which the SBCCP does not adequately offset impacts, on these species. If Crotch's bumble bee is not listed under CESA and its designation as a CESA candidate is removed, MMs BIO-5 and BIO-6 would not be required. This measure will be implemented for any program activity whose impacts on a special-status plant occurrence are not covered by the VHP or SBCCP.

If impacts of a program activity on the monarch butterfly and/or Crotch's bumblebee are covered under the forthcoming VHP amendment or the forthcoming SBCCP, MM BIO-5 through BIO-8 below would not be needed. Rather, the program will comply with applicable habitat plan conditions to reduce impacts.

> **MM BIO-5. Pre-Activity Survey for Crotch's Bumble Bees.** This measure will be implemented as long as Crotch's bumble bee is considered a CESA candidate species or is listed under CESA, and if impacts of a program activity on the species are not explicitly covered (with Crotch's bumble bee considered a Plan-covered species) under the VHP or SBCCP.
>
> If suitable Crotch's bumble bee habitat is present, work will occur during the active colony period (April through August), and the activity could potentially impact Crotch's bumble bee or its habitat (as determined by a qualified biologist), focused pre-activity surveys for Crotch's bumble bees will be conducted within areas identified as suitable habitat by a biologist who is qualified to identify Crotch's bumble bees and other local bumble bee species prior to commencement of work. Surveys shall not occur more than

14 days prior to these ground-disturbing and/or vegetation removal activities. The survey shall occur at least two hours after sunrise (>60F and <90F with no rain and no sustained wind of 10 mph or greater) or two hours before sunset and the survey area will include the work site boundaries and if accessible, a surrounding 50-foot buffer area. The survey duration will be appropriate to the size of the project site and buffer area based on the metric of approximately one person-hour of searching per three acres of suitable habitat. Surveys shall be visual encounters only, with identification aided by photographs. At a minimum, pre-construction survey methods will include the following:

- Search areas with flowering plants for foraging Crotch's bumble bees. Observed foraging activity may indicate a nest is nearby, and therefore, the survey duration should be increased when foraging Crotch's bumble bees are present.
- Visually look for Crotch's bumble bee nest entrances. Observe burrows, any other underground cavities, logs, or other possible nesting habitat including manmade objects.
- Look and listen for concentrated bumble bee activity. Although different bumble bee species may have different habitat affinities and may favor the flowers of different plant species, they are generalists and Crotch's bumble bee frequently occur in the same areas, and often use the same flowering plants, as other bumble bee species.
- If bumble bees are observed, obtain photos of the bees for documentation and to determine if the bees are Crotch's bumble bee or are not Crotch's bumble bee.
- Photographs will be taken with an appropriate camera (e.g., a DSLR camera with a macro or telephoto lens with image stabilization or other cameras equipped with a view finder, continuous shooting mode, and macro or telephoto lens with image stabilization) from multiple angles to capture key features to aid identification, if possible, and be in focus.

If a Crotch's bumble bee nest or individual is detected within the work area, MM BIO-6 below will be implemented.

MM BIO-6. Crotch's Bumble Bee Monitoring. This measure will be implemented as long as Crotch's bumble bee is considered a CESA candidate species or is listed under CESA, and if impacts of a program activity on the species are not explicitly covered (with Crotch's bumble bee considered a Plan-covered species) under the VHP or SBCCP.

If a Crotch's bumble bee nest is detected, a 50-foot no-disturbance buffer would be implemented around the nest unless a qualified biologist determines that a greater buffer distance is warranted or a smaller buffer distance would be appropriate (e.g., if a nest is found alongside an existing road where no excavation or other ground disturbing activities would occur). The buffer would be installed with a qualified biologist present to assure the buffer is clearly demarcated in the field with appropriate materials and signage. A biological monitor would monitor the nest long enough to determine the

buffer was effective in protecting the nest (i.e., the nest is not getting disturbed, and the workers are aware of the prohibited work area).

If a Crotch's bumble bee nest is present, the no-disturbance buffer will not be removed until a qualified biologist determines that the nest has senesced. To make this determination, a qualified biologist will monitor the nest multiple times over a 3-day period following observations of males and/or gynes, which indicate potential nest senescence. Monitoring will consist of observing the entrance(s) to the nest for at least an hour each time. If no Crotch's bumble bees are observed entering or exiting the nest during these monitoring events the nest will be determined inactive by the qualified biologist and the removal of the no-disturbance buffer can proceed.

If Crotch's bumble bee is detected (regardless is a nest is present or not) a biological monitor will be onsite during any ground disturbance, dewatering, and vegetation removal activities that occur when Crotch's bumble bee are present within the activity footprint. A 25-foot no-disturbance buffer will be implemented around Crotch's bumble bee individuals within the area. Biological monitoring will continue until the Crotch's bumble bee leaves the area on its own.

Because bumble bees are generalists, the removal of floral resources where Crotch's bumble bee are present could impact the health of the colony by limiting their food resources. If Crotch's bumble bees are present and floral resources that are in bloom must be removed, and no floral resources of similar quality are present nearby, the removal of those flowers will occur in a patchy manner (as directed by a qualified biologist) so that suitable flowers for foraging Crotch's bumble bee remain present.

If Crotch's bumble bees are observed to be within harm's way after construction commences, or a suspected individuals is killed or injured, construction will be halted and Valley Water will immediately contact the CDFW for guidance.

MM BIO-7. Milkweed Surveys and Avoidance. This measure will be implemented for program activities whose impacts on the monarch butterfly are not explicitly covered (with monarch butterfly considered a Plan-covered species) under the VHP or SBCCP.

Prior to the start of maintenance activities occurring March through October involving ground disturbance or vegetation removal in areas providing potential habitat for milkweed plants, a qualified biologist will survey the footprint of all impact areas, plus a 25-foot surrounding buffer, for milkweed plants. The 25-foot buffer will be surveyed in case any minor modifications to the impact footprint become necessary, rather than implying that milkweed plants must be buffered by 25 feet.

Ideally, the survey would be conducted from early April, when the plants would be identifiable from their vegetative structures (i.e., before flowering), through October, when the above-ground structures would be senescing but the plants would be identifiable by their seed ponds and other characters. Surveys may be conducted in

March only if the qualified biologist is able to demonstrate (e.g., based on examination of known, nearby reference occurrences) that milkweed was detectable and identifiable at the time. During the survey, the biologist would walk transects throughout all suitable habitat looking for milkweed plants. The survey transects will be spaced close enough to provide 100 percent visual coverage of all suitable habitat.

Any milkweed plants detected during the survey will be marked with flagging, stakes, or other materials to denote their location, and/or their GPS coordinates will be recorded. To the extent feasible, Valley Water will avoid direct impacts to milkweed plants and minimize indirect impacts by retaining an appropriate buffer (to be determined by the qualified biologist) around plants that are to be avoided.

If milkweed plants cannot be avoided during the period from March through October, MM BIO-8 will be implemented.

MM BIO-8. Pre-Activity Survey for Monarch Butterflies. This measure will be implemented for program activities whose impacts on the monarch butterfly are not explicitly covered (with monarch butterfly considered a Plan-covered species) under the VHP or SBCCP, and if milkweed plants cannot be avoided during the period from March through October (as determined through implementation of MM BIO-7).

If milkweed plants cannot be avoid during the period from March to October, a qualified biologist will survey milkweed plants for monarch butterfly eggs, larvae, or pupae to determine whether impacts to those plants will result in direct loss of monarchs. The survey will occur within three weeks, but no less than one week (to provide time for USFWS coordination if necessary), prior to the start of work in that area. If the plants do not support monarch eggs, larvae, or pupae, the qualified biologist will remove those plants immediately (during the survey) to prevent monarchs from laying eggs between the time of the survey and initiation of impacts.

If any eggs, larvae, or pupae are detected within the survey area, a photo will be taken of a representative sample of each life stage for documentation purposes. If impacts to the plants supporting those individuals cannot be avoided or delayed until the emergence of those individual butterflies as adults, and the monarch butterfly becomes a listed species under FESA but is not covered under the VHP at the time the impact occurs, Valley Water will coordinate with the USFWS regarding recommendations. For example, larvae could be relocated to milkweeds outside the impact area, if those milkweeds are not already occupied by monarch eggs or larvae. Alternatively, raising monarch butterflies indoors has become popular even with the general public, and eggs, larvae, or pupae that cannot be avoided by program activities could potentially be raised to maturity in captivity (with USFWS approval).

Significance after Mitigation

Valley Water would implement MM BIO-5 and MM BIO-6, which require pre-activity surveys for Crotch's bumble bees in advance of program activities as well as the establishment of

avoidance buffers and monitoring if any Crotch's bumble bee nests or individuals are discovered within a program work site, as long as Crotch's bumble bee is considered a CESA candidate species or is listed under CESA, and for any program activity whose impacts on the species are not explicitly covered (with Crotch's bumble bee considered a Plan-covered species) under the VHP or SBCCP. These measures would reduce impacts due to the loss of individual Crotch's bumble bees and their nests from program activities that are not covered under a Habitat Plan. Implementation of MM BIO-7 and MM BIO-8 would require pre-activity surveys for monarch butterflies and their host plants in advance of program activities outside the current VHP permit area in Santa Clara County, in San Benito County (unless the SBCCP is adopted and explicitly covers impacts on the monarch butterfly), and in Merced County, as well as the establishment of avoidance buffers and monitoring if any milkweed, eggs, larvae, or pupae are detected to minimize potential impacts. Therefore, the program's direct and indirect impacts on Crotch's bumble bee and monarch butterfly would be **less than significant with mitigation incorporated.**

Special-Status Fish and Essential Fish Habitat (Impact BIO-1C)

The Central California Coast steelhead, South-Central California Coast steelhead, Central Valley fall-run Chinook salmon, Pacific lamprey, riffle sculpin, Sacramento hitch, Monterey hitch, and southern coastal roach are present in streams in the program area, as discussed in Table 3.3-2. In addition, EFH for the Pacific Coast Salmon FMP is present within a number of creeks in the program area due to the presence of the Chinook salmon, as described in Section 3.3.2. Program impacts within streams potentially supporting special-status fish, and in EFH, would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach to program activities (e.g., previously disturbed areas would be prioritized for staging and parking, preferred access routes would clearly defined to avoid sensitive resources, equipment would be mounted on trucks, appurtenances may be abandoned in-place [rather than excavated and removed] to minimize ground disturbance, and no work would occur along buried sections of tunnels as part of the program). Nevertheless, program activities may impact special-status fish and EFH through direct or indirect disturbance of individuals and populations as well as disturbance, modification, or destruction of suitable habitat.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and maintenance activities that would have limited to no impacts on biological resources, including special-status fish and essential fish habitat. The potential for special-status fish to be impacted by other program activities is described below.

No program impacts on special-status fish are covered under the VHP, and special-status fish are not anticipated to be added as VHP-covered species in the future. Although the SBCCP is currently being developed, special-status fish species are not expected to be covered under the SBCCP in the future. Thus, compliance with VHP and SBCCP conditions would not include measures specifically designed to avoid and minimize impacts on special-status fish as a result of the program. However, for VHP-covered and SBCCP-covered projects, compliance with habitat plan conditions and payment of land cover fees would reduce impacts on special-status fish 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), as discussed in the paragraphs below.

Effects of work activities on special-status fish would depend largely on a species' use of the affected reach, the existing condition of the work area, and the work that occurs. Program activities located within spawning or rearing habitat, or upstream from such habitats, may have substantial effects on special-status fish and their habitats. In contrast, along reaches used primarily for migration or foraging, program activities would be unlikely to have a substantial impact regardless of the work performed. Regardless, all work within the bed and banks of streams would occur when the channel is dry, or following dewatering of the channel section. In addition, in accordance with AMM BIO-8, program activities involving ground disturbance typically would be conducted in the bed and banks of salmonid streams between June 15 and October 15, when incubating eggs and migrating salmonids are less likely to be present. Thus, direct impacts on fish as a result of mechanical or physical clearing of work and access areas, crushing by equipment, and trampling by personnel are not anticipated. In addition, the implementation of BMP BI-3 would ensure that impacts to habitats within the channel are minimized, and channels are re-contoured following the work. Impacts to special-status fish and essential fish habitat are discussed in further detail by impact type below.

Use of Coffer Dams and Pumps

For activities that may require the construction of coffer dams to temporarily dewater the affected channel (e.g., bank stabilization), fish that are present 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 program activities. In addition, pumps used to dewater work areas can potentially suck up eggs or fry of special-status fish, resulting in injury or death. Permanent loss of habitat for special-status fish would occur where existing natural areas are replaced with new infrastructure or hard materials (e.g., concrete) and not revegetated following the completion of work. AMM BIO-1 and AMM BIO-2 would ensure that activities with potential to affect special-status fish are identified; appropriate protective measures (i.e., BMPs, AMMs, and Mitigation Measures) are implemented; and employees and contractors are trained on protective measures, special-status fish identification, and habitat requirements. In VHP-covered program areas, required VHP conditions, which include several coffer dam-related avoidance and minimization measures to reduce impacts to special-status fish, would also be implemented. Nevertheless, program activities occurring in habitat for special-status fish (i.e., the Central California Coast steelhead, South-Central California Coast steelhead, Central Valley fall-run Chinook salmon, Pacific lamprey, riffle sculpin, Sacramento hitch, Monterey hitch, and southern coastal roach, as listed above) would have potential result in the loss of individuals, and, due to their rarity in the region, the impact would be **significant**.

Disturbance of Riparian and Wetland Habitats

During bank stabilization, the 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 would be likely to result in an adverse effect on fish habitat. In contrast, replacement of a hardened bank with softer stabilization methods, especially those

that enhanced instream complexity, would result in a considerable net benefit to fish by increasing habitat complexity and enhancing refugia, pool-riffle complexes, and rearing habitat. Because bank stabilization methods within the Guadalupe River, Stevens Creek, and Coyote Creek watersheds would be subject to the FAHCE Settlement Agreement, bank stabilization methods would be used in these areas that maintain or enhance geomorphic functions, riparian conditions, and fish habitat when feasible. Elsewhere, Valley Water would prioritize the use of stabilization methods that provided these benefits where feasible.

Vegetation management, bank stabilization, access, and other program activities occurring within riparian and wetland areas can potentially result in adverse effects on special-status fish. Such impacts would be mostly temporary, limited in extent, and highly localized. Nevertheless, riparian and wetland vegetation are important to the structure and function of instream habitat. For example, overhanging riparian vegetation provides shade that moderates stream temperatures. Unusual stream temperatures that are higher or lower than normal can lead to disease outbreaks and altered timing of migration (USDA Forest Service 1979), and excessive summer temperatures can be lethal to salmonids and their invertebrate prey species. Wetland vegetation that creates habitat complexity in streams also encourages the development of riffle/pool complexes used by fish, which provide refugia from predators and high flow velocities, and which are important to steelhead spawning and feeding; the removal of riparian vegetation may reduce this complexity and habitat value. Furthermore, terrestrial insects that occur in riparian and wetland vegetation are an important food item for salmonids, entering stream channels as a result of being blown or washed off riparian vegetation. In addition, plant material that falls into streams is an important food source for aquatic insects, which in turn are fed on by fish (USDA Forest Service 1979, Knight and Bottorff 1984). Activities that necessitate the operation of heavy equipment within the streambed after a creek is dewatered may compact the substrate, potentially killing benthic invertebrates that may serve as prey for fish, embedding gravel within finer sediments, and otherwise altering habitat for fish and their prey. Proposed vegetation management activities also may have beneficial impacts on fish. A study on the distribution, abundance, growth, and habitat use of steelhead in Uvas Creek (Casagrande 2010) determined that juvenile steelhead survival and growth in Uvas Creek from Uvas Road downstream to Highway 152 is currently limited, in part, because of the high shading and low light levels caused by the dense riparian forest. The author concludes that selective removal of canopy trees over riffles (where temperature impacts due to increased solar radiation would be limited) within this reach to reduce shading and increase light levels would improve the feeding efficiency of juvenile steelhead and lead to more abundant algal growth. In turn, more abundant algal growth would not only lead to an increase in the invertebrate population (a steelhead food source) but also would filter turbid waters released from upstream reservoirs. Thus, vegetation management activities in at least some portions of the program area may benefit steelhead by reducing the density of the riparian canopy. Nevertheless, due to the potential for loss and/or degradation of stream habitat and the loss of instream complexity, program impacts on special-status fish due to the loss of riparian and/or wetland vegetation would be **significant**.

Riparian vegetation in some work sites consists of herbaceous vegetation rather than woody vegetation. Compared to woody riparian vegetation dominated by trees and shrubs, herbaceous vegetation regenerates quickly and generally provide relatively low functions and values for wildlife, including special-status fish. Furthermore, implementation of BMPs and VHP conditions (to be implemented in VHP-covered program areas) to restore these areas following the completion of work would reduce long-term impacts to herbaceous vegetation. As a result, impacts of program activities on non-wetland, herbaceous riparian vegetation would be **less than significant** (although impacts to herbaceous wetland vegetation, which may extend up into riparian areas from the creek channel, would be significant as discussed under Impact BIO-3 below).

Valley Water would implement BMP BI-7 to minimize impacts to woody riparian vegetation and wetland vegetation due to program activities, and BMP BI-8 to ensure that appropriate vegetation is planted within temporary impact areas to restore habitat functions and values following construction. VHP impact fees paid by Valley Water for VHP-covered impacts on riparian and wetland habitats would contribute to the VHP's conservation program, which includes riparian and wetland habitat restoration to offset impacts of VHP-covered activities. Implementation of Valley Water BMPs and compliance with applicable VHP conditions would reduce impacts on riparian and wetland habitats within the VHP permit area. The impact would be **less than significant**. Riparian and wetland habitats could also be impacted outside of the current VHP permit area in Santa Clara County, San Benito County, and Merced County. Impacts on riparian and wetland habitats in San Benito County would not be reduced by SBCCP compliance unless and until the SBCCP is adopted, as discussed above. Impacts on woody riparian vegetation and/or wetland vegetation not covered by the VHP or SBCCP at the time those impacts occur would be **significant**.

Erosion and Sedimentation

Ground disturbance and vegetation removal 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 habitat, including 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 (Bustard and Narver 1975, Stillwater Sciences 2006). Increases in turbidity and sediment input also may cause stress to special-status fish because of feeding difficulties or displacement. The implementation of water quality BMP WQ-1 through BMP WQ-11 and BMP WQ-15 through BMP WQ-17, as well as program-specific AMM BIO-6 and AMM HYD-1 through AMM HYD-11, would minimize impacts due to erosion and sedimentation. In addition, VHP-covered activities would 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 these BMPs and AMMs, and (for VHP-covered activities) compliance with applicable VHP conditions, the majority of impacts due to erosion and sedimentation for VHP and non-VHP-covered activities would be reduced. However, the residual impacts due to erosion caused by vehicles would remain. The impact would be **significant.**

Invasive Species and Pathogens

Movement of earth, vegetation, water (e.g., runoff), equipment, vehicles, and personnel could spread invasive plant propagules. Invasive plants could reduce habitat quality for special-status fish in areas within and immediately outside impact areas. The release of water from pipelines could also introduce nonnatives from outside the area into aquatic habitats, which can affect the dynamics of local aquatic ecosystems and degrade habitat quality for special-status fish. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading invasive plants between work sites. AMM BIO-4 and AMM BIO-5 would ensure that Valley Water and its contractors implement measures to prevent the spread of invasive plants by washing and decontaminating vehicles and equipment, and minimizing work activities and vehicle use within natural areas. Compliance with required VHP conditions in VHP-covered program areas would also reduce potential spread of invasive plants and pathogens. Therefore, impacts due to the introduction of nonnatives would be reduced; however, residual impacts would remain due to the potential introduction of aquatic nonnatives during pipeline releases. This impact would be **significant**.

Use of Hazardous Materials

Minor spills of petrochemicals, hydraulic fluids, and solvents may occur during vehicle and equipment refueling or as a result of leaks. Without rapid containment and clean up, these materials may adversely affect water quality and potentially kill or injure fish. Similarly, contact by uncured concrete with water could release chemicals that could impair the health of fish. The implementation of BMP HM-8, BMP HM-9, and BMP HM-10 as well as program-specific AMM HAZ-2 and AMM HAZ-3 would minimize the potential for the spill of hazardous material that would kill or impair the health of special-status fish. In addition, VHP-covered activities would comply with requirements of Conditions 3, 4, and 5, which include measures to protect water quality due to spills. With the implementation of these BMPs and AMMs, and (for VHP-covered activities) compliance with applicable VHP conditions, impacts due to spills and leaks for VHP and non-VHP-covered activities would be **less than significant**.

Use of Herbicides

Vegetation management activities also would include the application of herbicides, as discussed above. Herbicides have the potential to result in impacts on special-status fish as a direct effect on the survival, reproduction, and growth of individuals, as well as indirect effects, such as reduction of the prey base or modification of their habitat. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Impacts of herbicide use are not covered by the VHP.

Implementation of BMP BI-4, AMM BIO-3, and AMM BIO-9 would avoid potential direct and indirect effects of herbicides on special-status fish by ensuring that herbicide application is avoided in sensitive wetland and riparian habitats. Thus, no native herbaceous vegetation or sensitive habitat would be removed by herbicide application under the program. With the implementation of Valley Water BMPs and program AMMs, impacts of herbicide application on special-status fish would be **less than significant**.

Water Releases

Pipeline dewatering involves the release of water, potentially into natural waterways, which can impact habitat for special-status fish by altering water temperature, dissolved oxygen, and water level and flow rates, as follows:

- **Temperature Effects.** Water temperature affects all metabolic and reproductive activities of fish, including growth, swimming, and ability to capture and assimilate food (Tebo 1974). Steelhead and Chinook salmon have similar temperature thresholds. Because steelhead rear year-round, increased water temperature can reduce survival and growth of juveniles year-round. In contrast, Chinook salmon do not rear in fresh water during months when local water temperatures may exceed these thresholds. Other salmonid life stages likely to occur during the preferred dewatering period, and hence be subject to temperature effects, are migrating adults and spawning/egg incubation. Based on a literature review, the U.S. Environmental Protection Agency (2003) recommended a Maximum Weekly Maximum Temperature for Chinook salmon and steelhead of no more than 18 degrees Celsius.

  Temperature effects on salmonids vary by time of year and life stage. Studies show that temperature thresholds for salmonids also vary, but upper optimal temperatures (defined as causing limited reduction in maximum growth rates) are approximately a daily average of 18 degrees Celsius (Washington State Department of Ecology 2002). Upper lethal temperature thresholds also vary in the literature, but 23.9 degrees Celsius is typical (Bell 1986). Effects of increased water temperatures include avoidance behavior, increased pre-spawning mortality of migrating adults, increased virulence of many fish diseases, and increased toxicity of most chemicals (Lantz 1971), as well as stress to or mortality of individuals if the increase is sudden and significant.

  Incubating eggs of all salmonids need relatively cool water. The U.S. Environmental Protection Agency (2003) recommends a Maximum Weekly Maximum Temperature of no more than 13 degrees Celsius for both steelhead and Chinook salmon eggs. Myrick and Cech (2001), in a literature review, found temperature-related hatch success varied greatly among different strains of steelhead. Other studies have shown that selective breeding of *O. mykiss* resulted in progeny that had increased hatch rates at higher temperatures (Ineno 2005), suggesting that species may adapt to local conditions.

Many studies that have assessed temperature thresholds for salmonids are from the Pacific Northwest, where salmonids inhabit waters with cooler temperature regimes compared to those in the program area. Recent studies have suggested that steelhead populations closer to the southern end of the species' range, such as in Santa Clara County, may be locally adapted to warmer water temperatures (Dressel 2023, Verhille 2016). Regardless, temperatures above these thresholds occur in both imported and local water only in the summer months, which are outside of the preferred timing for pipeline dewatering under the program. Some other special-status fish, such as Sacramento hitch, Monterey hitch, and southern coastal roach, are much more tolerant of higher water temperatures compared to salmonids. Riffle sculpin and Pacific lamprey temperature thresholds are not well understood, but are assumed to be similar to steelhead. Pacific lamprey eggs and larvae seem to have higher temperature tolerances than steelhead (Meeuwig 2005, Potter and Beamish 1975).

Water temperatures in program area pipelines vary, but due to the closed-conduit system the pipeline water is not exposed to solar radiation, and there is typically very little warming or cooling of the source water. Thus, this water may be cooler than the receiving water. Temperatures are usually closer to receiving water temperatures during winter months, which is the preferred timing of pipeline draining. It is also expected that pipeline water would mix with local water, buffering any differences in temperature.

- **Dissolved Oxygen Effects.** Stream-dwelling salmonids require high concentrations of dissolved oxygen in both the water column and in intragravel waters. Salmonids function normally at dissolved oxygen concentrations of 7.75 mg/L; exhibit various distress symptoms at 6.00 mg/L; and are often negatively affected at 4.25 mg/L (Davis 1975). Low dissolved oxygen levels impair metabolic rate, growth, swimming performance, and overall survival of young salmonids.

  Rapidly moving water, such as in a stream or large river, tends to have high concentrations of dissolved oxygen, while stagnant water where either low movement mixing and/or a high biological oxygen demand exists, typically may have much lower dissolved oxygen.

  Raw water releases do not adversely impact dissolved oxygen concentration in receiving waters. The residence time of the source water within an actively operated pipeline is relatively short (1-3 days, estimate), reducing any propensity for stagnation or depression of dissolved oxygen. Additionally, the typical release process should increase dissolved oxygen levels as water exits the pipe and flows into the receiving water body with turbulent mixing in open air. The small local streams with a relatively high surface area to volume ratio generally maintain good air mixing.

  Treated water releases require the use of either sodium bisulfite or calcium thiosulfate to dechlorinate the released water. The dechlorination chemicals have a

high chemical oxygen demand (refer to Section 3.1 Hydrology and Water Quality for further discussion). Excessive application of sodium bisulfite or calcium thiosulfite could deplete dissolved oxygen in receiving water and could decrease (in the case of sodium bisulfite) or increase (in the case of calcium thiosulfate) pH. Valley Water would comply with requirements of the San Francisco Bay Basin Plan for the release of all treated water pipelines in the program area, which include dissolved oxygen and pH parameters. Nevertheless, effects on some special-status fish could result from depleted dissolved oxygen or decreases in pH. The Sacramento hitch, Monterey hitch, and southern coastal roach are more tolerant of water with lower dissolved oxygen levels.

- **Water Level and Flow.** Salmonid species spawn in cool, clear, well-oxygenated streams with suitable depth, current velocity, and gravel size (Reiser and Bjornn 1979). In addition, steelhead migrate from December through April and Chinook migrate from mid-October to January, when stream flows are relatively high. Releases of water from pipelines along rivers and tributaries could potentially influence the locations where Chinook salmon and steelhead trout spawn. Higher flows in certain reaches can lead to spawning at locations in the riverbed that may later dry out due to subsequent reduced flows before the eggs hatch. These reductions in flow can strand fry in side channels and shallow backwaters that are isolated from the main river channel. Flow rates also have the potential to impact some fish species through scour of fry or eggs if erosion and flow rate are not controlled.

  Most channels are incised with defined banks and are not prone to formation of side channels (as occurs in a low, non-urbanized floodplain). A few locations, such as where the Cross Valley Pipeline drains into the Cochrane Channel and then across the floodplain to Coyote Creek; where the Central Pipeline drains along the Guadalupe River secondary bypass channel; and where Almaden Valley Pipeline drains into Ross Creek, could present potential entrainment conditions from an attraction flow entering the main stem when the pipeline is drained.

  As described in the Program Manual, flow rates from pipelines can be controlled manually to be between 0–20 cubic feet per second, and pump capacities range from 3.3–11 cubic feet per second. As a result, Valley Water is able to moderate flow rates from pipelines in accordance with BMPs discussed below to minimize adverse effects of high flows on special-status fish and their habitat.

  In addition, fish may be attracted by new flows when pipelines are drained, potentially traveling to areas that would not have sufficient resources to support them once the water release has ceased. Valley Water would implement program-specific AMM BIO-6, AMM HYD-4, and AMM HYD-7 to control flow rates and reduce impacts on fish due to changes in temperature, dissolved oxygen, water level, and flows. With the implementation of these measures, impacts due to changes in dissolved oxygen, water level, and flows would be

reduced. However, residual impacts would remain as there is no defined temperature change limitation to protect fish in the AMMs, and because fish may still be attracted to unsuitable reaches by temporary flows during pipeline releases. The impact to these fish would be **significant**.

In addition, if Valley Water shuts down a pipeline that (at the time of shutdown) is functioning to augment stream flows during a drought year or under other conditions when pipeline water is necessary to maintain instream flows, adverse effects on fish could occur due to the loss of instream aquatic habitat. These include the mortality of individuals that become stranded due to desiccation, a reduction in water quality, loss of foraging resources, and an increase in predation due to low water levels or the isolation of fish in small pools. The impacts would be **significant**.

Overall Significance Determination for Impact BIO-1C

Significant

Mitigation for Impact BIO-1C

Following implementation of AMM-BIO-1 to determine whether special-status fish could occur in a given activity area, and whether the planned activity would potentially result in impacts on special-status fish, Valley Water will implement MMs BIO-9 through BIO-15 below to reduce impacts on special-status fish.

MM BIO-9. Temperature Change Limitations. During pipeline dewatering, a slow release is mandatory to ensure receiving waters do not experience a temperature change greater than 2 degrees Celsius in either direction in salmonid streams or 4 degrees Celsius in either direction in non-salmonid streams.

MM BIO-10. Relocate Native Aquatic Vertebrates from Dewatered Channels. If fish or native aquatic vertebrates are present when cofferdams and water bypass structures are 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 occur as follows:

- Where water is to be diverted, prior to the start of work or during the installation of water diversion structures, native aquatic vertebrates shall be captured by qualified biologists in the work area and transferred to another reach as determined by a qualified biologist.
- Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work.
- If early life stages of special-status fish and/or amphibian species (in the absence of VHP and/or SBCCP take coverage) (i.e., eggs, fry, or larvae) are present and those life stages cannot be successfully relocated without harming them (e.g., steelhead eggs or fry), then the channel dewatering work will not occur until those early life stages are no longer present in the work area.

- Relocations of special-status fish and/or amphibian species (in the absence of VHP and/or SBCCP take coverage) will be conducted by a qualified biologist with appropriate permits and/or in consultation with the CDFW, USFWS, and/or NMFS, as appropriate.

MM BIO-11. Temporary Block Nets for Pipeline Dewatering. Temporary block nets, with openings less than or equal to 1/8 inch (3.125 millimeters) in diameter (California Department of Fish and Game 2003) shall be applied to any primary or secondary or side channel that could receive pipeline flows, causing attractant flows that will subside once pipeline dewatering is complete. Block nets will be periodically monitored for debris and removed after program activity completion and stabilization of water levels.

MM BIO-12. Pump Screening for Pipeline Dewatering. During pipeline dewatering, mesh screens less than or equal to 1/8 inch (3.125 millimeters) in diameter (California Department of Fish and Game 2003), will be placed over the release openings of gravity drain gates and on the suction and release piping of any submersible pumps used for pipeline releases to minimize release of nonnative species for any release of Delta water or the inadvertent entry of special-status fish into pumps and pipelines. The screens must be examined throughout the draining process to remove nonnative species and to prevent debris clogging.

MM BIO-13. Pump Screening for Creek Dewatering. When water is being pumped in a stream to dewater a section of creek, if the qualified biologist determines that special-status fish fry could potentially be present, pump intake screens will be less than or equal to 3/32 inch (2.39 millimeters) in diameter; otherwise, screens will be 5/32 inch (4.0 millimeters) in diameter (California Department of Fish and Game 2002). Screen designs will be approved of by a qualified biologist, to ensure that appropriate material is used so as to not injure fish.

MM BIO-14. Pre-Activity Survey for Special-Status Fish for Pipeline Dewatering. Work areas located in suitable breeding habitat where early life stages of special-status fish (i.e., eggs or fry) could be present, as determined by a qualified biologist, will first be surveyed by a qualified biologist to ensure that no early life stages are present within 500 feet upstream and downstream of the proposed structure (within the stream channel). If early life stages of special-status fish are found and could be impacted by pipeline dewatering, then the release point would either not be used, be redirected further downstream (such as with a hose), or release will not occur until early life stages that could be impacted by the dewatering are no longer present.

MM BIO-15. Alternative Water Source. If the Valley Water shuts down a pipeline that (at the time of shutdown) is functioning to augment stream flows during a drought year or under other conditions when pipeline water is necessary to maintain instream flows, then an alternative source of water will be identified before shutdown commences. Alternative sources of water would come from the following locations, in order of priority:

1. Other local water sources, such as from an upstream reservoir
2. Other raw water sources, such as another pipeline
3. Well water from a retailer
4. Dechlorinated municipal water piped to the site from the nearest hydrant or other repository

Significance after Mitigation

In accordance with MM BIO-10, Valley Water would capture and relocate special-status fish, including salmonids, prior to the initiation of activities that would require temporary water diversions or dewatering of the affected channel. In addition, in accordance with MM BIO-13 and MM BIO-14, a pre-activity survey for eggs and fry of special-status fish would be conducted prior to the start of work within areas where they might occur, and any pumps used to dewater streams would be screened to prevent the intake of eggs or fry. During relocation operations, special-status fish would be subject to harassment, pursuit, capture, mortality, and related stresses associated with netting and electrofishing. In addition to direct injury and mortality, the effects of electrofishing may include reduced growth rates of injured fish for at least a year following the electrofishing event (Dalby et al. 1996, Ainslie et al. 1998). Nevertheless, these relocations would effectively minimize the loss of individuals during dewatering. MM BIO-26, described under Impact BIO-2A would be implemented to reduce residual impacts due to the loss of woody riparian and/or wetland habitats by replacing lost habitat functions and values through restoration, preservation, or enhancement. Implementation of MM BIO-12 would ensure that pumps are screened during dewatering. This measure would prevent aquatic nonnative species from entering local waterways and inadvertent entry of special-status fish. Implementation of MM BIO-9 would reduce impacts due to temperature changes on fish, and the implementation of MM BIO-11 would ensure that block nets are installed to prevent fish from traveling upstream during pipeline releases resulting in attractant flows. The implementation of MM BIO-15 would ensure that an alternative water source is identified before shutting down a pipeline that (at the time of shutdown) is functioning to augment stream flows during a drought year or under other conditions when pipeline water is necessary to maintain instream flows and would maintain instream flows. The impacts on fish and essential fish habitat would be **less than significant with mitigation incorporated.**

Special-Status Amphibians and Reptiles (Impact BIO-1D)

The California tiger salamander, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, and coast horned lizard are present in the program area vicinity, as discussed in Table 3.3-2. Program impacts within natural areas supporting these species would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach to program activities (e.g., previously disturbed areas would be prioritized for staging and parking, preferred access routes would clearly defined to avoid sensitive resources, equipment would be mounted on trucks, appurtenances may be abandoned in-place [rather than excavated and removed] to minimize ground disturbance, and no work would occur along buried sections of tunnels as part of the program). Nevertheless, program activities may impact

special-status amphibians and reptiles through direct or indirect disturbance of individuals as well as disturbance, modification, or destruction of suitable habitat. The potential for special-status amphibians and reptiles to occur in the program area is as follows:

- The foothill yellow-legged frog and coast horned lizard are unlikely to occur in the program area due to the limited known occurrences in the program vicinity and because they are localized in areas where program activities would not occur. However, suitable habitat for these species is present within program work areas, and the possibility that program activities would impact individuals cannot be ruled out.
- The California tiger salamander and California red-legged frog are known from several locations in the program area vicinity, and can potentially occur within and adjacent to program work areas where suitable habitat is present.
- The northwestern pond turtle is known to occur in a number of locations in the program area.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and maintenance activities that would have limited to no impacts on biological resources, including special-status amphibians and reptiles. The potential for special-status amphibians and reptiles to be impacted by other program activities is described below.

Ground Disturbance and Vegetation Removal

Ground disturbance and vegetation removal may result in direct and indirect impacts on special-status amphibians and reptiles. Injury or mortality of individuals can occur as a result of worker foot traffic, equipment use, vehicular traffic, vegetation removal, and ground disturbance. Seasonal movements of individuals may be temporarily impacted during program 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. 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. 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. For amphibians, work activities that disturb aquatic habitats can potentially disturb vegetation or rocks that support egg masses, destroy egg masses directly, and/or potentially result in the siltation of eggs or larvae. Special-status amphibians and reptiles that use existing animal burrows as refugia (e.g., California tiger salamanders and California red-legged frogs) may be crushed in their burrows by the passage of heavy equipment or trapped and suffocated. Ground disturbance could also result in the loss of northwestern pond turtle eggs or hatchlings in nests. The addition of rip-rap (which may be used by the program for bank stabilization) would provide some benefit to amphibians and reptiles, as they use rip-rap areas for cover and foraging. AMM BIO-1 and AMM BIO-2 would ensure that activities with potential to affect special-status amphibians and reptiles are identified; appropriate protective measures (i.e., BMPs, AMMs, VHP conditions,

and Mitigation Measures) are implemented; and employees and contractors are trained on protective measures, special-status amphibian and reptile identification, and habitat requirements. Valley Water would also implement BMP BI-11 to ensure that trash is removed daily from the work area. In addition, VHP-covered program activities would comply with Conditions 3, 5, and 12 to avoid and minimize impacts in ponds, streams, and other wetland habitats. Implementation of Valley Water BMPs and AMMs, as well as compliance with applicable VHP conditions for VHP-covered activities, would reduce impacts of VHP-covered program activities on the California tiger salamander, California red-legged frog, foothill yellow-legged frog, and northwestern pond turtle, which are covered under the VHP, to **less than significant**.

However, the coast horned lizard may not be adequately conserved via VHP compliance because populations in VHP preserves may not be adequate to offset program impacts. Although reserves (including current reserves and future land acquisitions) could possibly support this species, its presence in VHP reserves is uncertain, and it therefore cannot be assumed that compliance with the VHP would necessarily result in conservation of this species that is sufficient to offset the program's impacts, and residual impacts would remain due to potential direct and indirect effects of both VHP-covered and non-VHP-covered activities on this species. The impact would be **significant**.

The California red-legged frog, California tiger salamander, and northwestern pond turtle can also potentially be impacted outside of the VHP permit area in Santa Clara County. Such impacts would not be reduced by VHP compliance, and would be **significant**.

For impacts that occur in San Benito County, the SBCCP is currently being developed, and Valley Water has requested that San Benito County provide coverage for program activities in northern San Benito County. The California red-legged frog, California tiger salamander, foothill yellow-legged frog, and northwestern pond turtle are included in the preliminary list of species to be covered by the SBCCP (ICF 2023). If and when these species are covered under the SBCCP in the future, the program would implement applicable conditions of this habitat plan to further reduce program impacts on these species. Impacts on these species along the Santa Clara Conduit in San Benito County would not be reduced by SBCCP compliance unless and until the SBCCP is adopted. Until then, impacts on these species within San Benito County would be **significant**.

Impacts on the California tiger salamander and California red-legged frog near the Pacheco Pumping Station in Merced County are not covered under a habitat plan, and would also be **significant**. No suitable habitat for the foothill yellow-legged frog is present within the program area outside of the current VHP permit area in Santa Clara County, including within San Benito and Merced counties.

Because the California tiger salamander is listed under CESA, and the California tiger salamander and California red-legged frog are listed (and the northwestern pond turtle is proposed for listing) under FESA, due to their rarity in the region, overall program impacts due

to the loss of individuals of these species due to non-VHP covered activities would be **significant**. Impacts of the program on the foothill yellow-legged frog due to non-VHP-covered activities are not anticipated, as this species only occurs within the program area within the current VHP permit area. Therefore, **no impact** to foothill yellow-legged frog would occur. Due to the small numbers of coast horned lizards that occur in the program area vicinity, impacts of VHP-covered and non-VHP-covered activities due to the loss of individual coast horned lizards would be **significant**.

Permanent loss of habitat for special-status amphibians and reptiles would occur where existing natural areas are replaced with new infrastructure or hard materials (e.g., rock base or concrete) and not revegetated following the completion of work. Temporary impacts would also occur where habitats are impacted by program activities and revegetated following the completion of work. Valley Water would implement BMP BI-3 and BMP BI-7 and (for VHP-covered projects) comply with Conditions 3, 5, and 12 to minimize impacts on aquatic and wetland habitats and ensure that temporarily impacted areas are restored following the completion of work. Nevertheless, temporary and permanent impacts on habitat for special-status amphibians and reptiles would still occur under the program. Because these species are covered under the VHP, impacts due to the temporary or permanent loss of habitat for the California tiger salamander, California red-legged frog, and northwestern pond turtle within the VHP permit area would be **less than significant**. However, due to the sensitivity of these species, program impacts outside of the VHP permit area such as temporary or permanent loss of aquatic or upland habitats for the California tiger salamander, California red-legged frog, and/or northwestern pond turtle would be **significant**.

Because coast horned lizards make limited use of the program area, suitable habitat for this species is widely available in the region, and implementation of the program is not expected to remove or degrade large areas of habitat such that regional populations of this species would be impacted, program impacts due to the loss or degradation of coast horned lizard habitat would be **less than significant**.

Ground disturbance and vegetation removal may result in adverse indirect effects on aquatic habitat for special-status amphibians and reptiles due to an increase in erosion and sedimentation, as described for special-status fish above. The implementation of water quality BMP WQ-1 through BMP WQ-11 and BMP WQ-15 through BMP WQ-17, as well as program-specific AMM BIO-6 and AMM HYD-1 through AMM HYD-11, would minimize impacts due to erosion and sedimentation. In addition, VHP-covered activities would 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 these BMPs and AMMs, and (for VHP-covered activities) compliance with applicable VHP conditions, impacts due to indirect adverse effects aquatic habitat within the VHP permit area would be **less than significant**. However, outside of the VHP permit area, residual impacts due to erosion from vehicles may result in impacts on aquatic habitat for special-status amphibians and reptiles. The impact would be **significant.**

Water Releases

Creek dewatering may result in a temporary loss of habitat, blockage of movement (e.g., movements of individuals within aquatic habitat along creeks), and stranding or death of amphibian eggs and larvae. Valley Water would implement AMM BIO-6 and AMM HYD-4 to control flow rates and reduce impacts on special-status amphibians due to changes in flows. VHP-covered activities would also comply with requirements of Conditions 3, 4, and 5 to protect water quality and avoid and minimize impacts to streams. With the implementation of these measures, and (for VHP-covered activities) compliance with applicable VHP conditions, impacts due to indirect adverse effects aquatic habitat within the VHP permit area would be **less than significant**. Outside of the VHP permit area, the potential loss of individuals as well as the temporary loss of habitat for California tiger salamanders, California red-legged frogs, and western pond turtles would be **significant**.

Use of Hazardous Materials

Program activities may 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 amphibians and reptiles and/or their habitats. For amphibians, work activities that disturb aquatic habitats can potentially directly expose adults, juveniles, larvae, and/or eggs to petrochemicals, hydraulic fluids, and/or solvents. Implementation of BMP HM-8, BMP HM-9, and BMP HM-10 as well as program-specific AMM HAZ-2 and AMM HAZ-3 would minimize the potential for the spill of hazardous material that would kill or impair the health of special-status amphibians and reptiles. In addition, VHP-covered activities would comply with Conditions 3, 4, and 5, which include measures to protect water quality due to spills. Therefore, impacts due to spills and leaks would be **less than significant**.

Invasive Species and Pathogens

Movement of construction personnel and equipment within the site, and between on-site and off-site areas, could spread pathogens such as chytrid fungus and Ranavirus, which can impair the health of amphibians, or shell disease, which could impact turtles, as well as invasive plant propagules, which can reduce habitat quality for special-status amphibians and reptiles in areas within and immediately outside impact areas. The release of water from pipelines could also introduce nonnatives from outside the area into aquatic habitats, which can affect the dynamics of local aquatic ecosystems and degrade habitat quality for special-status amphibians. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites. Program-specific AMM BIO-4 and AMM BIO-5 would ensure that Valley Water and its contractors implement measures to prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, and minimizing work activities and vehicle use within natural areas. Therefore, impacts due to the introduction of nonnatives and pathogens would be reduced; however, residual impacts would remain due to the potential introduction of aquatic nonnatives during pipeline releases. The impact would be **significant**.

Use of Herbicides

Proposed vegetation management activities include the application of herbicides. Amphibians in particular can potentially be impacted by herbicides due to the absorption of these chemicals through their thin, moist skin. As a result, the use of herbicides for vegetation management could result in direct and indirect adverse effects on special-status amphibians. Herbicide application can also potentially result in the temporary and permanent removal of habitat for special-status amphibians and reptiles. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Impacts of herbicide application are not covered by the VHP. Implementation of BMP BI-4 and program-specific AMM BIO-3 and AMM BIO-9 would reduce effects on special-status amphibians and reptiles by ensuring that herbicide application is avoided in sensitive habitats, including habitats for listed species. Therefore, impacts on special-status amphibians due to herbicide application would be **less than significant**.

Overall Significance Determination for Impact BIO-1D

Significant

Mitigation for Impact BIO-1D

Following implementation of AMM-BIO-1 to determine whether special-status amphibians and reptiles could occur in a given activity area, and whether the planned activity would potentially result in impacts on these species, Valley Water will implement MMs BIO-10 through BIO-15 provided under Impact BIO-1C above, and MMs BIO-16 (for all special-status amphibians), BIO-17 (for northwestern pond turtles), BIO-18 (for coast horned lizards), BIO-19 (for all special-status amphibians), and BIO-20 (for California tiger salamander, California red-legged frog, and northwestern pond turtle) below to reduce non-VHP-covered program impacts on these species.

If impacts of a program activity on one of these species are explicitly covered under the forthcoming VHP amendment or the forthcoming SBCCP, MM BIO-16 through MM BIO-20 below would not be implemented. Rather, the program will comply with applicable habitat plan conditions to reduce impacts.

> **MM BIO-16: Protection of California Tiger Salamander and California Red-legged Frog.** For program activities whose impacts on the California tiger salamander and California red-legged frog are not explicitly covered under the VHP or SBCCP, program activities will implement the following measures to protect the California tiger salamander and California red-legged frog in areas where these species potentially occur and for activities that could impact these species if they are present (as determined by the qualified biologist):
>
> **Pre-Activity Survey**: The work area will be surveyed by a qualified biologist within 48 hours prior to the start of work.

Avoidance: Valley Water will avoid program activities whenever feasible in areas with suitable breeding and nonbreeding habitat. If program activities will occur within suitable habitat, if feasible and determined warranted by a qualified biologist, impacts will be minimized as follows: 1) conduct program work during times the species is least likely to be adversely affected, 2) use fencing to keep the species away from the construction zone, and 3) any burrows located within the work area will be flagged by the qualified biologist for avoidance.

Access Routes: For construction projects, all off-road access routes to vaults or other program activity areas will be surveyed and if needed delineated by a qualified biologist prior to use. Routes located in such areas will not be more than 15 feet wide. Personnel will be required to adhere to marked paths, and no travel outside of marked access routes will be allowed.

Avoid Animal Entry and Entrapment: All pipes, hoses, or similar structures less than 12 inches diameter will be closed or covered to prevent animal entry. In addition, all construction pipes, culverts, or similar structures, greater than 2 inches in diameter, stored at a construction site overnight, will be inspected thoroughly for wildlife by a qualified biologist or properly trained construction personnel before the pipe is buried, capped, used, or moved. If inspection indicates presence of California tiger salamander or California red-legged inside stored materials or equipment, work on those materials will cease until a qualified biologist determines the appropriate course of action.

To prevent entrapment of animals, all excavations, steep-walled holes or trenches more than 6 inches deep will be secured against animal entry at the close of each day. Any of the following measures may be employed, depending on the size of the hole and method feasibility: 1) Hole to be securely covered with plywood, or similar materials, and its perimeter will be covered with dirt so there are no gaps, at the close of each working day; or 2) In the absence of covers, the excavation will be provided with escape ramps constructed of earth or untreated wood, sloped no steeper than 2:1, and located no farther than 15 feet apart; or 3) In situations where escape ramps are infeasible, the hole or trench will be surrounded by filter fabric fencing or a similar barrier with the bottom edge buried to prevent entry.

Pipeline Release: If a pipeline water release is scheduled to occur from January through August within potential breeding habitat (as determined by a qualified biologist), a survey for the species will be performed by a qualified biologist within 1 week prior to release. If eggs or larvae are found within 500 feet upstream or downstream of the release point and could be impacted by pipeline dewatering, then the release point would either not be used, be redirected further downstream (such as with a hose), or release will not occur until early life stages that could be impacted by the dewatering are no longer present.

Procedure if Individuals are Encountered: If California tiger salamander or California red-legged frog, or an individual that may be these species, are found, a qualified biologist will be contacted immediately and any work that may result in the direct injury or mortality or indirect disturbance of the individual will immediately cease. If a California tiger salamander or California red-legged frog is determined to be present, an appropriately sized buffer (the size of which will be determined by the qualified biologist) will be established around the location of the individual(s) and work may proceed outside of the buffer zone (with a qualified biological monitor present, as needed and determined by the qualified biologist). No work will occur within the buffer zone. Work within the buffer zone will be rescheduled. The individual(s) will be allowed to leave under its (their) own volition. However, if, in the opinion of the qualified biologist, capture and removal of the individual(s) to a safe place outside of the work area is necessary to prevent adverse effects, the individual(s) will be captured and relocated by a qualified biologist with appropriate permits and/or in consultation with the CDFW and/or USFWS, as appropriate.

MM BIO-17: Protection of Northwestern Pond Turtles. I f impacts of a program activity on the northwestern pond turtle are not explicitly covered by the VHP and/or SBCCP, and if program activities will occur in habitats where northwestern pond turtles potentially occur as determined by a qualified biologist, a qualified biologist will conduct a pre-activity survey for the northwestern pond turtle within 48 hours prior to start of work. If a pond turtle, or a turtle that could possibly be a northwestern pond turtle is found, a qualified biologist will be contacted immediately and any work that may result in the direct injury or mortality or indirect disturbance of the individual will immediately cease. If a pond turtle is determined to be present, an appropriately sized buffer (the size of which will be determined by a qualified biologist) will be established around the location of the individual(s) and work may proceed outside of the buffer zone (with a qualified biological monitor present, as needed and determined by the qualified biologist). No work will occur within the buffer zone. Work within the buffer zone will be rescheduled. The individual(s) will be allowed to leave under its(their) own volition. However, if, in the opinion of the qualified biologist, capture and removal of the individual(s) to a safe place outside of the work area is necessary to prevent adverse effects, the individual will be captured and relocated by a qualified biologist with appropriate permits and/or in consultation with the CDFW and/or USFWS, as appropriate.

If an active pond turtle nest is detected within the activity area, a buffer zone, the size of which will be determined by a qualified biologist, around the nest will be established and maintained. The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. Should a pond turtle nest be unearthed during excavation, the CDFW and USFWS will be contacted immediately for guidance.

MM BIO-18: Protection of Coast Horned Lizards. If impacts of a program activity on the coast horned lizard are not explicitly covered by the SBCCP, and if program

activities will occur in habitats where coast horned lizards potentially occur as determined by a qualified biologist, a qualified biologist will conduct a pre-activity survey for the coast horned lizard within 48 hours prior to start of work. If a coast horned lizard, or a lizard that could possibly be a coast horned lizard is found, a qualified biologist will be contacted immediately and any work that may result in the direct injury or mortality or indirect disturbance of the individual will immediately cease. If a coast horned lizard is determined to be present, a buffer (the size of which will be determined by a qualified biologist) will be established around the location of the individual(s) and work may proceed outside of the buffer zone (with a qualified biological monitor present, as needed and determined by the qualified biologist). No work will occur within the buffer zone. Work within the buffer zone will be rescheduled. The individual(s) will be allowed to leave under its (their) own volition. However, if, in the opinion of the qualified biologist, capture and removal of the individual(s) to a safe place outside of the work area is necessary to prevent adverse effects, the individual will be captured and relocated by a qualified biologist with appropriate permits and/or in consultation with the CDFW.

MM BIO-19: Protection of Wetlands. A qualified biologist will determine if wetlands are potentially present within the program activity work area, or close enough to the work area to be impacted by program activities. If wetlands may be present, a qualified biologist will survey the work area and immediately adjacent areas for wetlands within 30 days of the start of work activities.

Temporary disturbance to and permanent loss of wetland and aquatic habitats will be avoided to the maximum extent feasible. All temporary staging areas and access roads will be located away from wetland habitat to the extent practicable, and wetland and aquatic habitats abutting development areas will be clearly demarcated to avoid inadvertent disturbance during work activities.

If impacts to wetlands are unavoidable, Valley Water will notify the appropriate regulatory agencies and obtain applicable permits for any wetland impacts.

MM BIO-20: Special-Status Amphibian and Reptile Compensatory Mitigation. If impacts of a program activity on suitable habitat for the California tiger salamander, California red-legged frog, or northwestern pond turtle are not explicitly covered by the VHP or SBCCP, all temporary impact areas will be returned to pre-work conditions as feasible. Temporary and permanent impact areas will be quantified, and if necessary, compensatory mitigation will be provided.

If feasible, 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 areas within and outside of waters of the

U.S./state, and when no impacts on individual California tiger salamanders, California red-legged frogs, and/or northwestern pond turtles have occurred).

Alternatively, when necessary, Valley Water proposes to compensate for these impacts by purchasing credits from an approved conservation bank, providing mitigation at a 1:1 (mitigation: impact) ratio on an acreage basis for both direct permanent and temporary impacts.

If the above options are not available, Valley Water would provide mitigation through the creation, enhancement, or preservation of habitat for the impacted species. Creation of new habitat or enhancement of low-quality habitat would be provided at a minimum 1.5:1 (mitigation: impact) ratio; preservation and management of existing occupied habitat would be provided at a minimum 1:1 (mitigation: impact) ratio. Valley Water will develop an HMMP for the selected option, which will be provided to the CDFW and/or USFWS for review, as applicable for state and/or federally listed species. That plan will include, at a minimum, the following:

- a description of measures to be undertaken if necessary to enhance (e.g., through focused management) the mitigation site for listed amphibians and/or reptiles;
- proposed management activities to maintain high-quality habitat for listed amphibians and/or reptiles; and
- a description of species monitoring measures on the mitigation site, including performance indicators and success criteria (including maintaining or increasing the abundance of upland refugia for listed amphibians and maintaining or improving the quality of aquatic habitat for the affected species)

It is possible that this mitigation measure may be refined during the Section 7 consultation process with the USFWS (e.g., in the Biological Opinion covering program effects on the federally listed species) or the Section 2081(b) consultation process with the CDFW (e.g., in an Incidental Take Permit), in which case the refinements required by these agencies would be implemented.

Significance after Mitigation

Valley Water would implement MM BIO-10 for all special-status amphibians and reptiles, MM BIO-16 for California tiger salamander and California red-legged frog, MM BIO-17 for northwestern pond turtles, and MM BIO-18 for coast horned lizards which would ensure that appropriate measures are taken to effectively avoid and minimize impacts on individuals of these species and reduce program impacts due to the loss of individuals. Implementation of MM BIO-19 and MM BIO-20 for California tiger salamander, California red-legged frog, and northwestern pond turtle provided would reduce non-VHP and non-SBCCP-covered program impacts on aquatic and upland habitats for these species. If impacts of a program activity on these species are not explicitly covered by the VHP or SBCCP, Valley Water would implement MM BIO-10 and MM BIO-16 to identify California tiger salamander and/or California red-legged frog eggs and larvae in work areas, and MM BIO-13 to ensure that any pumps used to

dewater streams are screened to prevent the intake of eggs or larvae. In addition, MM BIO-19 and MM BIO-20 for California tiger salamander, California red-legged frog, and northwestern pond turtle would reduce program impacts on aquatic and upland habitats for these species outside of the VHP permit area. Implementation of MM BIO-12 would ensure that pumps are screened to prevent aquatic nonnative species from entering local waterways when pipelines are drained. Therefore, residual impacts related to the potential introduction of aquatic nonnatives during pipeline releases would be reduced. Impacts to special-status amphibians and reptiles and their habitat would be **less than significant with mitigation incorporated**.

Nonbreeding Special-Status Birds and Mammals (Impact BIO-1E)

The program will potentially result in impacts on the following nonbreeding special-status bird and mammal species in the program area: the state and federally endangered California condor; the state threated bank swallow; the mountain lion, a candidate for listing under CESA; the Townsend's big-eared bat and western red bat, which are California species of special concern; and the ringtail, a state fully protected species. The potential for these species to occur in the program area is as follows:

- The bank swallow occurs in the program area vicinity only as a scarce migrant. This species does not breed in the program area, and is expected to occur only as a scarce aerial forager.
- The California condor occurs in the program area only as an infrequent dispersant, typically flying over the area. This species does not nest in the program area, and individuals are unlikely to occur at ground level where program facilities are present.
- Mountain lions are present in low densities in more remote, natural areas but are not expected to den in the program area due to a lack of high-quality denning habitat as well as human disturbance within program activity areas.
- Ringtails may be present in low densities in more remote, natural areas, but are not expected to den in the program area due to a lack of high-quality habitat as well as human disturbance within program activity area.
- No known breeding colonies of Townsend's big-eared bats are present in the program area, and no high-quality roosting sites are present in program facility areas. Individuals may roost in low numbers in suitable buildings nearby and forage in the program area, but they are not expected to breed there due to a lack of suitable habitat as well as human disturbance within program activity areas.
- Western red bats occur in the program area in low numbers as migrants and winter residents, typically roosting in trees near riparian areas, but they do not breed in the program area.

Due to these species' low probability of occurrence in program activity areas, as well as their limited use of the program area only for foraging, program activity impacts on the California condor, bank swallow, Townsend's big-eared bat, western red bat, mountain lion, and ringtail would be both limited and unlikely.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and maintenance activities that would have limited to no impacts on biological resources, including nonbreeding special-status birds and mammals. The potential for nonbreeding special-status birds and mammals to be impacted by other program activities is described below.

Effects of program activities on the California condor, bank swallow, mountain lion, Townsend's big-eared bat, and ringtail in the program area would be extremely limited, as these species do not breed within or adjacent to program activity areas, and individuals spend limited time within and/or adjacent to these areas. Thus, program activities would have no effects on the survival, reproduction, and/or growth of these species. Rather, the potential for program effects on these species would pertain primarily to the physical presence of people and equipment during program activities, which may result in the indirect disturbance of nonbreeding, foraging individuals.

Such individuals are very mobile, and would vacate the area in response to work activities, avoiding potential direct impacts (e.g., injury or mortality) but 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. Increases in human concentration and activity associated with program 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 and prey upon nonbreeding special-status birds and mammals. Due to the limited number of individuals that would be impacted by the program and the lack of any potential for injury or mortality of individuals of these species, this impact would be limited. Furthermore, within the VHP permit area, Valley Water would comply with VHP Condition 1 to ensure that measures are implemented to avoid direct impacts on state and federally listed species (i.e., the California condor and bank swallow) and state fully protected species (i.e., the ringtail). Therefore, the impact to these species would be **less than significant**.

The California condor, bank swallow, mountain lion, Townsend's big-eared bat, and ringtail are not currently covered by the VHP, though the mountain lion is being considered for addition as a covered species during the VHP amendment in progress (ICF 2023). If and when the SBCCP and/or the VHP should be modified to cover additional species, the program will comply with applicable conditions of these habitat plans to reduce program impacts on covered nonbreeding special-status bird and mammal species, as needed. In addition, the program's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit all of these species, all of which likely 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, and these nonbreeding special-status birds and mammals are expected to benefit from the VHP's conservation program.

Program activities may also result in temporary and permanent impacts to habitat for nonbreeding special-status bird and mammal species. Program activities that result in temporary and permanent impacts within natural areas would remove foraging and dispersal habitat for these species, as well as resources such as invertebrate and small mammal prey. The removal of trees during program activities would also reduce availability of roosting sites for the small numbers of western red bats that occur in the program area. Increases in human concentration and activity associated with program activities in the vicinity of suitable habitat may result in an increase in a reduction in the quality of foraging habitat caused by the introduction of nonnative vegetation or pathogens such as *Phytophthora*. The unintentional introduction of nonnative plant species and/or introduction or mobilization of pathogens during work activities can also degrade suitable foraging habitat, potentially leading to the spread of invasives. Due to the anticipated limited temporary and permanent impacts of the program on suitable habitat for these species, and because the extent of these impacts would be limited relative to available habitat for these species in the region, impacts to these species' habitat would minimal. Furthermore, Valley Water would implement BMP BI-7 to minimize impacts within vegetated areas, as well as BMP BI-8 to ensure that ecologically appropriate native seeding options are used, and these measures would reduce the loss of habitat for nonbreeding special-status bird and mammal species within temporary impact areas. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites, and AMM BIO-4 would ensure that Valley Water personnel and contractors take measures to prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, minimizing work activities and vehicle use within natural areas, and complying with applicable guidelines related to *Phytophthora*. The impact would be **less than significant**.

Overall Significance Determination for Impact BIO-1E
Less than Significant

Mitigation for Impact BIO-1E
No mitigation would be required for Impact BIO-1E.

Nesting Common and Special-Status Birds (Impact BIO-1F)
The program will result in impacts on a number of common and special-status birds that nest in the program area. Special-status birds that can potentially nest in the program area are the state and federally endangered least Bell's vireo; state endangered bald eagle; state threatened Swainson's hawk and tricolored blackbird; the Vaux's swift, least bittern, northern harrier, burrowing owl, loggerhead shrike, yellow warbler, San Francisco common yellowthroat, yellow-breasted chat, and grasshopper sparrow, which are California species of special concern; and the state fully protected golden eagle and white-tailed kite.

The potential for common and special-status birds to nest in the program area is as follows:

- The least Bell's vireo and least bittern are unlikely to nest in the program area due to the limited occurrences of these species in the program vicinity. However, suitable nesting habitat for these species is present within and adjacent to

program work areas, and the possibility that program activities would impact nesting individuals cannot be ruled out.

- The northern harrier, Swainson's hawk, white-tailed kite, golden eagle, burrowing owl, Vaux's swift, loggerhead shrike, yellow warbler, San Francisco common yellowthroat, yellow-breasted chat, grasshopper sparrow, and tricolored blackbird are known to nest in several locations in the program area vicinity, and can potentially nest (albeit in low numbers) within and adjacent to program work areas where suitable habitat is present.
- Numerous species of non-special-status birds occur commonly in the program vicinity, and they can potentially nest in vegetation, on structures, and on the ground throughout the program area.

As discussed under *Quantification of Impacts*, the majority of activities conducted under the program are day-to-day inspection and maintenance activities that would have limited to no impacts on biological resources, including nesting common and special-status birds. The potential for nesting common and special-status birds to be impacted by other program activities is described below.

The nesting season for most birds breeding in the program 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. If birds are actively nesting in or close to work areas when program activities occur, vegetation clearing, ground disturbance, and activity of equipment, vehicles, and personnel could result in the physical disturbance or destruction of active nests (including eggs and young) or the indirect disturbance of adults to the point of nest abandonment. Valley Water would implement BMP BI-5 to ensure that active nests with eggs or young are avoided and BMP BI-6 to install nesting exclusion devices in areas where construction activities would occur. Program-specific AMM BIO-6 would ensure that active nests are protected by appropriate no-disturbance buffers and AMM BIO-1 and AMM BIO-2 would also ensure that activities with potential to affect nesting common and special-status birds are identified; appropriate protective measures (i.e., BMPs, AMMs, and Mitigation Measures) are implemented; and employees and contractors are trained on protective measures. VHP-covered program activities would also comply with Condition 1, which would ensure that measures are implemented to avoid direct impacts on nesting birds, as well as Conditions 15, 16, and 17, which protect burrowing owls, least Bell's vireos, and tricolored blackbirds, respectively. The implementation of Valley Water BMPs and AMMs would avoid and minimize impacts on individuals of common and special-status nesting bird species regardless of their location in the program area by ensuring that active nests are identified and protected with appropriate no-disturbance buffers, consistent with requirements of VHP Conditions 1, 15, 16, and 17. Thus, program impacts due to the loss of individuals from the direct and indirect disturbance of active nests, regardless of their location in the program area, would be **less than significant**.

The Swainson's hawk, loggerhead shrike, bald eagle, and golden eagle are being considered for addition to the VHP under the amendment currently in progress. Some program activities that

are not currently covered under a habitat plan and that can impact common and special-status nesting birds include activities located outside the current VHP permit area in Santa Clara County, and all program activities in San Benito County and Merced County. However, the portions of the program area located outside of the current VHP permit area in Santa Clara County may be located within the VHP permit area in the future following the VHP amendment in progress. Similarly, the SBCCP is currently being developed, and Valley Water has requested that San Benito County provide coverage for program activities in northern San Benito County. The burrowing owl, least Bell's vireo, Swainson's hawk, and tricolored blackbird are included in the preliminary list of species to be covered by the SBCCP (ICF 2023). If and when these portions of the program area are covered under the VHP and/or SBCCP, and/or if the VHP should be modified to cover additional species, the program would implement applicable conditions of these habitat plans to further reduce program impacts on covered nesting special-status bird species.

As discussed for nonbreeding special-status birds and mammals above, the physical presence of people and equipment during program activities in the program area may impact the behavior of foraging individuals of bird species that nest in the program area. Such individuals are very mobile, and would vacate the area in response to work activities, avoiding potential direct impacts (e.g., injury or mortality) but 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. Increases in human concentration and activity associated with program 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 and prey upon birds. Due to the limited number of individuals that would be impacted by the program and the lack of any potential for injury or mortality of individuals, this impact would be limited. Furthermore, within the VHP permit area, Valley Water would comply with VHP Condition 1 to ensure that measures are implemented to avoid direct impacts on state and federally listed species (i.e., the least Bell's vireo and bald eagle) and state fully protected species (i.e., the white-tailed kite and golden eagle). The impact to these species would be **less than significant**.

Vegetation clearing and ground disturbance may result in the temporary or permanent loss of nesting and/or foraging habitat for birds that nest in the program area. Program activities that result in temporary and permanent impacts within natural areas would remove nesting, foraging, and dispersal habitat for these species, as well as resources such as invertebrate and small mammal prey. Increases in human concentration and activity associated with program activities in the vicinity of suitable habitat may result in an increase in a reduction in the quality of habitat caused by the introduction of nonnative vegetation or pathogens such as *Phytophthora*. The unintentional introduction of nonnative plant species and/or introduction or mobilization of pathogens during work activities can also degrade suitable habitat, potentially leading to the spread of invasives. Due to the anticipated limited temporary and permanent impacts of the program on suitable habitat for these species, and because the extent of these impacts would be limited relative to available habitat for these species in the region, impacts to

these species' habitat, with the exception of impacts to breeding habitat for the least Bell's vireo, burrowing owl, and tricolored blackbird outside of the VHP permit area (discussed separately below), would be minimal. Nevertheless, Valley Water would implement BMP BI-7 to minimize impacts within vegetated areas, as well as BMP BI-8 to ensure that ecologically appropriate native seeding options are used, and these measures would reduce the loss of habitat for breeding special-status bird species within temporary impact areas. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites, and AMM BIO-4 would ensure that Valley Water personnel and contractors take measures to prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, minimizing work activities and vehicle use within natural areas, and complying with applicable guidelines related to *Phytophthora*. In addition, the program's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is expected to benefit these species to some extent. 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, including many animal species, in addition to the species that are explicitly "covered species" under the VHP. For these reasons, the program's impacts to these species would be **less than significant**.

The removal of a tree used for nesting in the past 5 years by Swainson's hawks, bald eagles, or golden eagles is not included in the program; therefore, no loss of recently used nest sites for these species would result from the program. Suitable open foraging habitat used by these species, which forage extensively in open grassland, woodland, and agricultural habitats (for Swainson's hawks and golden eagles) and aquatic habitats (for bald eagles) in the region (Cornell Lab of Ornithology 2024), is extensively available in the program area vicinity. Implementation of the program 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 impacts due to the loss or degradation of habitat for these three raptors species would be **less than significant**.

Outside of the VHP permit area, residual impacts of program activities on suitable nesting and foraging habitat for the least Bell's vireo, burrowing owl, and tricolored blackbird could occur in portions of the program area in San Benito County and Merced County. Foraging habitat for these species including riparian habitat (for least Bell's vireos and tricolored blackbirds), grassland habitat (for burrowing owls and tricolored blackbirds) is widespread in the region, and any program impacts resulting in the loss of habitat used only for foraging, but not breeding, would be **less than significant**. Although the probability of impacts to habitat that is actually used for nesting by these species is very low, due to the low populations of the least Bell's vireo and burrowing owl and very localized nature of tricolored blackbird colonies in the program area, there is some potential for program activities to result in the loss of nesting habitat. Given the low populations of these species, impacts to habitat used for breeding by any of these species within three (3) years prior to implementation of a program activity, as determined by a qualified biologist based on database searches and available survey data, would be **significant**.

Overall Significance Determination for Impact BIO-1F
Significant

Mitigation for Impact BIO-1F
Following implementation of AMM-BIO-1 to determine whether the least Bell's vireo, burrowing owl, and/or tricolored blackbird could occur in a given activity area, and whether the planned activity would potentially affect these species, Valley Water will implement MM BIO-21 to reduce non-VHP-covered and non-SBCCP-covered impacts on the least Bell's vireo, burrowing owl, and tricolored blackbird. Additional mitigation measures that would further reduce impacts on breeding special-status birds include MM BIO-20 and MM BIO-26.

> **MM BIO-21: Compensatory Mitigation for Least Bell's Vireo, Burrowing Owl, and Tricolored Blackbird.** If impacts of a program activity on breeding habitat for the least Bell's vireo, burrowing owl, or tricolored blackbird that has been occupied within the three (3) years prior to implementation of a program activity, as determined by a qualified biologist based on database searches and available survey data, are not explicitly covered by the VHP or SBCCP,and habitat quality will not be returned to pre-activity conditions or better within one (1) year following the activity, permanent impact areas will be quantified, and if necessary, compensatory mitigation will be provided.
>
> If feasible (e.g., based on the work location and whether the Habitat Agency can accommodate the mitigation), 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 areas within and outside of waters of the U.S./state, and when no impacts on individual least Bell's vireos, burrowing owls, and/or tricolored blackbirds have occurred). Alternatively, when necessary (i.e., if it is not possible to mitigate for impacts via the payment of VHP impact fees), Valley Water proposes to compensate for these impacts by purchasing credits from an approved conservation bank.
>
> If the above options are not available, Valley Water would provide mitigation through the following:
>
> - Creation, enhancement, and/or preservation of habitat for the impacted species. Creation of new habitat or enhancement of low-quality habitat would be provided at a minimum 1.5:1 (mitigation: impact) ratio, and preservation and management of existing occupied habitat would be provided at a minimum 1:1 (mitigation: impact) ratio. Valley Water will develop an HMMP for the selected option. That plan will include, at a minimum, the following: a description of measures to be undertaken to enhance (e.g., through focused management or other appropriate means) the mitigation site for nesting least Bell's vireos, burrowing owls, and/or tricolored blackbirds;

- proposed management activities, such as riparian and wetland habitat enhancement, artificial burrows, measures targeted at sustaining populations of burrowing mammals, or other measures to maintain high-quality habitat for the affected species; and a description of species monitoring measures on the mitigation site, including performance indicators and success criteria (including maintaining or improvement the quality of habitat for the affected species)

The HMMP will be provided to the CDFW and/or USFWS for review, as applicable for state and/or federally protected species. While the minimum requirements for the HMMP listed above will be met, and will be sufficient to reduce impacts under CEQA, it is possible that this mitigation measure may be refined with supplemental and/or equivalent requirements during the Section 7 consultation process with the USFWS (e.g., in the Biological Opinion covering program effects on the federally listed species) or the Section 2081 consultation process with the CDFW (e.g., in an Incidental Take Permit), in which case the refinements required by these agencies would be implemented.

Significance after Mitigation

Implementation of MM BIO-21 would reduce impacts on the least Bell's vireo, burrowing owl, and tricolored blackbird in the absence of coverage by (and compliance with) the VHP and/or SBCCP by providing compensatory mitigation for program impacts to breeding habitat for these species. The impact to these species would be **less than significant with mitigation incorporated.**

Potentially Breeding Special-Status Mammals and Breeding Bats (Impact BIO-1G)

The San Francisco dusky-footed woodrat, American badger, San Joaquin kit fox, and pallid bat, as well as common species of breeding bats, are present in the program area vicinity and can potentially breed and forage in the program area, as discussed under *Environmental Setting* above. Program impacts within natural areas supporting these species would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach to program activities (e.g., previously disturbed areas would be prioritized for staging and parking, preferred access routes would clearly defined to avoid sensitive resources, equipment would be mounted on trucks, appurtenances may be abandoned in-place [rather than excavated and removed] to minimize ground disturbance, and no work would occur along buried sections of tunnels as part of the program). Nevertheless, program activities may impact breeding special-status mammals and breeding non-special-status bats through direct or indirect disturbance of individuals as well as disturbance, modification, or destruction of suitable habitat. The potential for special-status mammals to occur in the program area is as follows:

- The American badger, San Joaquin kit fox, and pallid bat may be present in suitable habitat in the program area, but the likelihood that an active den or roost of these species would be present within or adjacent to the program area is low due to the very scarce and localized occurrence of the kit fox and pallid bat and the low densities at which American badgers occur.

- The San Francisco dusky-footed woodrat may be present in a number of locations in the program area that provide dense scrub, woodland, or forest habitats.
- Common species of breeding bats may roost in trees, rock outcrops, bridges, or buildings providing suitable cavities and crevices throughout the program area.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and maintenance activities that would have limited to no impacts on biological resources, including potentially breeding special-status mammals and breeding bats. The potential for breeding special-status mammals and common breeding bats to be impacted by other program activities is described below.

Ground disturbance and vegetation removal in support of maintenance activities may result in direct and indirect impacts on breeding special-status mammals and common roosting bats. These activities can potentially impact the survival, reproduction, and/or growth of these species where they breed in the program area by potentially trapping or crushing individual kit foxes or badgers in dens due to compaction by equipment or filling of burrows, or removing active woodrat nests (resulting in injury or mortality of individuals) located in trees or on the ground. 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. Individual San Joaquin kit foxes and woodrats can also potentially take shelter in stored pipes or trenches overnight, and be injured or killed when work activities resume the following day. In addition, the physical presence of people and equipment during program activities can result in adverse indirect effects on individuals due to the presence of human activity, noise, and equipment, potentially causing individuals to abandon a den (for kit foxes or badgers), nest (for woodrats), or roost (for pallid bats and common bat species). Program-specific AMM BIO-1 and AMM BIO-2 would ensure that activities with potential to affect special-status mammals and common breeding bats are identified; appropriate protective measures (i.e., AMMs, VHP conditions, and Mitigation Measures) are implemented; and employees and contractors are trained on protective measures, special-status species identification, and habitat requirements. VHP-covered activities would also comply with Condition 18, which incorporates measures to avoid and minimize impacts on San Joaquin kit foxes and their active dens within the VHP permit area. Within the VHP permit area, impacts of VHP-covered program activities on San Joaquin kit foxes would be **less than significant** . However, outside of this area, due to the sensitivity of this state and federally endangered species, impacts on the San Joaquin kit fox would be **significant.**

Furthermore, due to the rarity of American badgers and pallid bats in the region, the loss of individual American badgers and pallid bats due to PMP activities throughout the program area would be **significant**. Due to the ecological importance of woodrats and common species of roosting bats, the loss of individual woodrats and common species of roosting bats would also be **significant**. The loss of a large colony of common roosting bats would also be significant due to effects on the species' local populations.

The San Joaquin kit fox is the only potentially breeding special-status mammal species discussed under Impact BIO-1G that is covered under the VHP; the San Francisco dusky-footed woodrat, American badger, pallid bat, and common species of roosting bats are not covered by the VHP; however, the American badger may be covered under the VHP in the future. The American badger and San Joaquin kit fox are included in the preliminary list of species to be covered by the SBCCP (ICF 2023). If and when portions of the program area in San Benito County are covered under the SBCCP, and/or if the VHP should be modified to cover the American badger and other additional species, the program would comply with applicable conditions of these habitat plans to further reduce program impacts on covered breeding special-status and mammals and roosting bats.

As discussed for nonbreeding special-status birds and mammals and breeding common and special-status birds above, the physical presence of people and equipment during program activities can result in adverse indirect effects on individuals due to the presence of human activity, noise, and equipment, potentially causing individuals to move out of the area. Any foraging individual kit foxes, badgers, woodrats, or bats, which are very mobile, would vacate the area in response to work activities, avoiding potential direct impacts (e.g., injury or mortality) but 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. 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. Increases in human concentration and activity associated with program 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 and prey upon birds. However, due to the limited number of individuals that would be impacted by the program and the limited potential for injury or mortality of individuals, this impact would be **less than significant**.

Vegetation clearing and ground disturbance would result in the temporary or permanent loss of breeding and/or foraging habitat for breeding special-status mammals in portions of the program area where these species occur. The removal of dense understory vegetation, such as riparian vegetation and scrub, could result in the loss of potentially suitable nesting and foraging habitat for woodrats as well as foraging habitat for bats, kit foxes, and badgers, while the removal of trees containing cavities or crevices would result in the loss of potential roosting sites for bats. The removal of more open habitats, especially those containing burrows, can also potentially remove suitable denning habitat for kit foxes or badgers as well as foraging habitat for bats. Increases in human concentration and activity associated with program activities in the vicinity of suitable habitat may result in an increase in a reduction in the quality of habitat caused by the introduction of nonnative vegetation or pathogens such as *Phytophthora*. The unintentional introduction of nonnative plant species and/or introduction or mobilization of pathogens during work activities can also degrade suitable habitat, potentially leading to the spread of invasives. The release of small volumes of water from vaults into natural upland

areas, which would be extremely infrequent under the program, can potentially result in very limited impacts on small areas of habitat for breeding special-status mammals and common roosting bats due to the relatively small amount of water present in these facilities. Such pump-outs can lead to erosion and allow the introduction of weedy species in and around the affected area, which can lower habitat suitability for special-status mammals and common roosting bats that may forage in the area. However, suitable breeding and foraging habitat for the American badger (e.g., grasslands, scrublands, and woodlands) and San Francisco dusky-footed woodrat (e.g., riparian and scrub habitats), as well as foraging habitat for the pallid bat and common bat species (i.e., open natural areas), is extensively available in the program area vicinity, and implementation of the program is not expected to remove or degrade large areas of these habitats such that regional populations of these species would be impacted. In addition, program activities would have little to no impact on high-quality habitat for these species, as they are expected to make only very limited use of habitats in the program area due to their scarcity in the program area. Furthermore, much of the vegetation that is removed by the program would regenerate following the completion of program activities, and would then be available for use by special-status mammals in the future, although some long-term loss of habitat may occur. Valley Water would implement BMP BI-7 to minimize impacts within vegetated areas, as well as BMP BI-8 to ensure that ecologically appropriate native seeding options are used, and these measures would reduce the loss of habitat for breeding special-status mammals within temporary impact areas. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites, and AMM BIO-4 would ensure that Valley Water personnel and contractors take measures to prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, minimizing work activities and vehicle use within natural areas, and complying with applicable guidelines related to *Phytophthora*. In addition, the program would comply with applicable VHP conditions and pay VHP land cover fees to mitigate impacts on habitat for the San Joaquin kit fox within the VHP permit area. Due to the anticipated limited temporary and permanent impacts of the program on suitable habitat for these species, and because the extent of these impacts would be limited relative to available habitat for these species in the region, with the implementation of program BMPs and AMMs, and (for VHP-covered projects) compliance with VHP conditions and payment of VHP land cover fees, impacts to these species' habitat would be **less than significant**.

The program's contribution to the Habitat Agency's reserve system via the payment of VHP land cover fees is also expected to benefit the non-VHP-covered San Francisco dusky-footed woodrat, American badger (which may be covered under the VHP in the future), and pallid bat, as well as common species of breeding bats, to some extent. 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, including many animal species, in addition to the species that are explicitly "covered species" under the VHP. Thus, for the American badger and San Francisco dusky-footed woodrat in particular, VHP compliance would contribute to a conservation program that would provide high-quality habitat that supports these species and benefits their regional populations.

Overall Significance Determination for Impact BIO-1G
Significant

Mitigation for Impact BIO-1G
Following implementation of AMM BIO-1 to determine whether San Joaquin kit foxes could occur in a given activity area, and whether the planned activities would potentially result in impacts on this species, Valley Water would implement the "Avoid Animal Entry and Entrapment" component of MM BIO-16 provided under Impact BIO-1D above and MM BIO-22 below to reduce impacts on this species.

Following implementation of AMM BIO-1 to determine whether San Francisco dusky-footed woodrats, American badgers, pallid bats, and common species of roosting bats could occur in a given activity area, and whether the planned activities would potentially result in impacts on these species, Valley Water would implement the "Avoid Animal Entry and Entrapment" component of MM BIO-16 provided under Impact BIO-1D above and MM BIO-23 (for woodrats), BIO-24 (for pallid bats and common bat species), and BIO-25 (for American badgers) below to reduce impacts on these species.

If program activities in a given work area are covered under the forthcoming VHP amendment or the forthcoming SBCCP, and the American badger and/or San Joaquin kit fox are also covered, MM BIO-16 and MM BIO-22 (for the San Joaquin kit fox), and/or MM BIO-25 (for the American badger) below would not be needed. Rather, the program will comply with applicable habitat plan conditions to reduce impacts.

Mitigation Measures that would further reduce impacts on these species' habitats include MMs BIO-20, BIO-26, and BIO-21.

> **MM BIO-22: Protection of San Joaquin Kit Foxes.** In the absence of VHP and/or SBCCP take coverage, program activities will implement the following measures to protect San Joaquin kit foxes in areas where this species potentially occurs for activities that could potentially impact the San Joaquin kit fox (as determined by the qualified biologist):
>
> - Within 14 days prior to the start of work activities, a qualified biologist will conduct a pre-activity survey for the San Joaquin kit fox, kit fox dens, and/or sign of kit fox. If a natal/pupping den is discovered within 200 feet of the work area, the USFWS and CDFW shall be immediately notified. Disturbance to all active San Joaquin kit fox dens shall be avoided.
> - Valley Water 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.
- Before any heavy equipment that has been stored overnight is moved, a qualified biologist or an individual trained by the qualified biologist to look for kit foxes shall inspect the area underneath and around the equipment to ensure that no San Joaquin kit foxes are present and at risk of being harmed by moving equipment.
- A qualified biologist will be on-site or on-call during all activities that could result in take of the San Joaquin kit fox. The biologist will have oversight over implementation of all components of MM BIO-22, and if any of the requirements associated with these measures are not being fulfilled, they will have the authority to stop program activities.
- If any San Joaquin kit foxes are observed during the pre-activity survey or during the course of program activities, the USFWS and CDFW will be contacted for guidance.
- If work will occur off-road/in natural areas, the limits of the work area, access route(s), and staging area(s) will be flagged, if not already marked by other fencing, and all activities will be confined within the marked area.
- Nighttime work will be avoided to the maximum extent feasible. If nighttime work is absolutely necessary, it will occur with a qualified biologist present.
- Vehicles using unpaved access roads will observe a 15-mile-per-hour speed limit.
- No pets of any kind will be allowed in work areas.
- Prior to the start of work each morning, the qualified biologist, or an individual trained by the qualified biologist to look for kit foxes, will inspect all parked vehicles and equipment, as well as stored equipment such as pipes, for kit foxes.
- To prevent the inadvertent entrapment of San Joaquin kit foxes, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps (with no greater than a 3:1 slope) constructed of earthen fill or wooden planks. In addition, all pipes, culverts, or similar structures within a diameter of 3–12 inches that are stored on-site overnight will be thoroughly inspected for San Joaquin kit foxes by a qualified biologist, or an individual trained by the qualified biologist to look for kit foxes, before they are moved, buried, or capped.

MM BIO-23: Protection of San Francisco Dusky-Footed Woodrats. In areas where the San Francisco dusky-footed woodrat potentially occurs for activities that could potentially impact woodrats (as determined by a qualified biologist), a qualified biologist will conduct a pre-activity survey for San Francisco dusky-footed woodrats

when work will occur within potentially suitable habitat. The survey will be conducted within 14 days prior to the start of work in areas where the species may occur. If woodrats are present, the biologist will determine and flag an appropriate no-disturbance buffer around each nest for avoidance purposes. Valley Water will minimize impacts to nests by avoiding the direct destruction or modification of the nests to the extent feasible, as determined by work personnel in consultation with a qualified biologist.

If one or more woodrat nests are determined to be present and physical disturbance or destruction of the nest(s) 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. First, an alternate location for the nest material shall be chosen by a qualified biologist based on the following criteria: 1) proximity to current nest location; 2) safe buffer distance from planned work; 3) availability of food resources; and 4) availability of cover. An alternate nest structure will then be built at the chosen location. The structure will be made up of small logs (e.g., available materials 2 inches in diameter or greater) stacked to provide a foundation on which the woodrats can add nest material. Subsequently, during the evening hours (i.e., within 2 hours prior to sunset), a qualified biologist will slowly dismantle the existing woodrat nest to allow any woodrats to flee and seek cover. All sticks from the nest will be collected and spread over the alternate structure. If young woodrats that are still dependent on their mother are discovered, relocation efforts will cease for the evening and the nest will be checked the following evening. If it is found that adults have relocated their dependent young, relocation activities will resume. If young remain in the nest after multiple nights of checking, the CDFW will be contacted for guidance and Valley Water will implement CDFW's guidance to minimize impacts on young woodrats.

MM BIO-24. Protection of Roosting Bats.

Pre-Activity Survey. If program activities will occur within or immediately adjacent to suitable roosting habitat for pallid bats or common species of bats for activities that could potentially impact these species (as determined by a qualified biologist), a qualified biologist will conduct a pre-activity survey to identify habitat features suitable for roosting bats within 14 days prior to the start of work activities. If desired, a preliminary survey may be also performed farther in advance (e.g., during the maternity season of a prior year) to assess whether bats are using a particular location, ensure that any necessary exclusion of bats from roosts can be scheduled prior to the work, and confirm the presence or absence of a maternity colony. If suitable habitat is present and thorough inspection of potential roost locations during the daytime is not feasible, a dusk emergence survey will be performed when bats, if present, can be observed flying out of a potential roost. If a colony of pallid bats of any size, at least 10 big brown bats, or more than 20 bats of other common species is present, the qualified biologist shall leave an acoustic detector at the roost location during the maternity season (defined as April 1 to August 31) for one to several nights, as needed, to determine if a maternity

colony is present. If the pre-activity survey occurs outside the maternity season and the status of the roost (i.e., as a maternity or non-maternity roost) is unknown, it will be assumed to be a maternity colony.

If roosting bats, or suitable roosting habitat for bats, are not detected during the pre-activity survey, no further measures are required. If high-quality suitable habitat is present and slated to be removed by the activity, and bats are not detected during the initial survey, the biologist shall conduct a follow-up survey (either a daytime survey or a dusk emergence survey, as appropriate and as determined by the qualified biologist) within 48 hours prior to the removal of the habitat. If roosting bats are absent, no additional measures are required.

If roosting bats are present within or adjacent to the work location, the biologist will determine an appropriate no-disturbance buffer to protect the active roost. The size of the no-disturbance buffer will be determined by the qualified biologist based on the nature of the activity, the vulnerability of the roost to disturbance, and the time of year; typical buffers are provided in Table 3.3-6, Typical No-Disturbance Buffers Around Active Bat Roosts (H. T. Harvey & Associates 2019b). Buffers may need to be larger during the maternity season (defined as April 1 to August 31), when bats may be more sensitive to disturbance. The biologist will determine whether monitoring to determine if the bats are disturbed by the activity is feasible, and determine if monitoring is appropriate. If monitoring is performed, the biologist will have authority to stop work if program activities disturb the roosting bats. If the bats are observed exhibiting behaviors indicating they are likely to abandon an active day roost or maternity roost, the biologist will determine if the no-disturbance buffer needs to be increased.

Table 3.3-6 Typical No-Disturbance Buffers Around Active Bat Roosts

Bat Species	Distance (in feet) Between Activity/Equipment and Active Roost					
	Construction Trucks and Heavy Equipment	Small Vehicles	Drilling, Trenching, and Small Equipment	Light Source without Shielding	Pedestrian Traffic	Stationary Diesel/ Gasoline Exhaust Sources >2 minutes
Pallid bat	120	90	150	400	65	250
Yuma myotis, Mexican free-tailed bat	90	65	150	250	65	250
Other species	100	65	150	300	65	250

Bat Exclusion. If maintaining an appropriate no-disturbance buffer around an active bat roost is not feasible, as determined by work personnel in consultation with a qualified

biologist, bats may be excluded from their roosts under the guidance of a qualified biologist. Exclusion will occur either outside the maternity season (i.e., during the period from September 1 to March 31) or after the qualified biologist has determined that a maternity roost is not present.

Trees supporting active bat roosts may be removed using a two-step removal process under the direction and supervision of a qualified biologist, to encourage bats to leave the roost of their own volition. Removal of trees will preferentially take place during appropriate weather conditions as determined by a qualified biologist, consisting of a period of warm weather and dry conditions when nighttime lows are not less than 45° F and bats are most active. The first day of tree removal would involve the removal of tree limbs that do not support roost habitat features, so that the tree and any roosting bats are sufficiently disturbed and thereby encouraged to vacate the tree. The tree may then be removed on the second day. If bats must be evicted from roosts in artificial structures, a qualified biologist will identify and oversee appropriate eviction methods, based on details of the structure.

Compensatory Mitigation. If a maternity colony of pallid bats of any size, more than 10 big brown bats, or more than 20 bats of other common species is determined to be present and the roost site must be physically removed by the program, replacement roost habitat that is appropriate to the species shall be provided. If the pre-activity survey and roost removal occur outside the maternity season and the status of the roost (i.e., as a maternity or non-maternity roost) is unknown, it will be assumed to be a maternity colony. The nature of the replacement roost habitat (e.g., the design of an artificial roost structure) will be determined by a qualified biologist based on the number and species of bats detected. Ideally, the roost structure should be installed no more 100 feet from the location of the original roost (or as close to the location as possible). Exact placement of replacement habitat shall be determined in consultation with a qualified bat biologist.

MM BIO-25. Protection of American Badgers. For activities whose impacts on the American badger are not explicitly covered by the VHP or SBCCP, and that occur within or immediately adjacent to suitable denning habitat for American badgers and work activities could potentially impact this species (as determined by a qualified biologist), a pre-activity survey shall be conducted within 14 days prior to the start of work activities to determine the presence or absence of active badger dens within the work area, or close enough to the work area to be disturbed by work activities (as determined by a qualified biologist).

If an active badger den is identified during the pre-activity, an appropriate no-disturbance buffer, the size of which will be determined by a qualified biologist, will be established around the den if feasible.

During the period from March 1 through August 31, when young could be present within a natal den, a biological monitor shall be present during work activities that occur sufficiently close to any known or suspected badger den (as determined by a qualified biologist) to ensure the buffer is adequate to avoid direct impacts to individuals or den abandonment. Such monitoring shall occur until it is determined that young are of an independent age such that program activities will not result in harm to individual badgers.

During the period from March 1 through August 31, if the qualified biologist determines that young badgers are old enough to leave their natal den or have vacated the site, any active badger dens can be excavated, and ground disturbance can proceed. Alternatively, during the period from September 1 through the end of February, when young are unlikely to be present, if a non-natal badger den is located within the program activity work area, the den may be excavated by a qualified biologist to cause the badger to leave the area. Because badgers are known to use multiple burrows in a breeding den complex, multiple burrows may need to be excavated.

Significance after Mitigation

Implementation of MM BIO-22 for activities whose impacts on the San Joaquin kit fox are not explicitly covered by the VHP or SBCCP would ensure that individual San Joaquin kit foxes and active dens are protected (consistent with VHP Condition 18). Implementation of MM BIO-23 for woodrats, MM BIO-24 for pallid bats and common bat species, and MM BIO-25 for American badgers (in the absence of VHP and/or SBCCP take coverage) would ensure that impacts on active dens (for badgers), roosts (for bats), and nests (for woodrats) would be avoided and minimized. Because badgers dig new dens frequently and use multiple dens when they are not breeding, the excavation of active nonbreeding dens as specified in MM BIO-25 to encourage badgers to leave the work area would not be significant under CEQA. In addition, the implementation of MM BIO-16 would ensure that no kit foxes or woodrats are injured or killed when pipes are moved and/or work resumes within holes and trenches. The impact to these species would be **less than significant with mitigation incorporated**.

Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service (less than significant with mitigation incorporated)

Impacts BIO-2A, 2B, and 2C discuss impacts on sensitive riparian (including sycamore alluvial woodland), serpentine, and alkaline grassland communities, respectively. Sensitive wetland and aquatic habitats are also considered sensitive natural communities; however, impacts on these land cover types are addressed under Impact BIO-3 below.

While it is possible that one or more oak trees could be impacted by the program, no oak woodland communities or sensitive associations have been affected by the program previously, and Valley Water does not expect any future program activities to affect oak woodlands.

Therefore, impacts of program activities are less than significant under CEQA, and such impacts are not discussed further.

Loss or Disturbance of Riparian Habitat, Including Sycamore Alluvial Woodland (Impact BIO-2A)

Riparian habitats are located along streams throughout the program area, and may support the following sensitive associations, among others:

- 61.205.04 *Salix laevigata* / *Rosa californica* (G4/S3)
- 71.060.47 *Quercus agrifolia* / *Salix lasiolepis* (G3/S3)
- 61.130.15 *Populus fremontii* – *Salix laevigata* (G4/S3)

Because vaults and dewatering infrastructure are located along streams in many locations, and some pipelines cross or run alongside of streams, program activities at these locations may result in the loss, modification, and/or disturbance of riparian vegetation over the course of the program, although the extent of such impacts would be limited.

As discussed under *Existing Conditions* above, riparian habitats provide a wide range of biological functions for fish and wildlife, ranging from providing habitat for fish and other aquatic species to foraging and nesting habitat for birds and movement corridors for terrestrial species, and impacts on these riparian habitats would impact a variety of fish and wildlife species. Impacts on special-status plant and wildlife species resulting from disturbance or loss of riparian habitat are addressed in separate impact discussions under Impact BIO-1 above; this section focuses on impacts due to the loss or disturbance of the riparian habitat itself. Central California sycamore alluvial woodland habitat is more sensitive compared to other riparian habitat types in the program area due to its decline in the region, the decline in mature sycamore trees that compose this habitat, and its very limited distribution. This habitat may support the following sensitive associations in the program area, among others:

- 61.312.01 *Platanus racemosa* – *Quercus agrifolia* (G3/S3)
- 61.313.02 *Platanus racemosa* / *Toxicodendron diversilobum* (G3/S3)
- 74.100.13 *Umbellularia californica* – *Platanus racemosa* (G3/S3)

Therefore, impacts that may be different for Central California sycamore alluvial woodland compared to other riparian habitat types are discussed herein, and the mitigation measure provided under *Mitigation* below incorporates mitigation requirements specific to this community type.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and maintenance activities that would have limited to no impacts on biological resources, including riparian habitats. The potential for riparian habitats, including sycamore alluvial woodland habitat, to be impacted by other program activities is described below.

Ground Disturbance and Vegetation Removal

Ground disturbance and vegetation removal in support of program activities may result in direct and indirect impacts on riparian habitats. 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. Valley Water would implement BMP BI-7 to minimize impacts within vegetated areas, and BMP BI-8 requires a qualified biologist or vegetation specialist ensure that ecologically appropriate native seeding options are used, which would reduce the loss of riparian habitat within temporary impact areas. Program-specific AMM BIO-1 and AMM BIO-2 would ensure that activities with potential to affect riparian habitat are identified; appropriate protective measures (i.e., BMPs, AMMs, VHP conditions, and Mitigation Measures) are implemented; and employees and contractors are trained on protective measures. Compliance with VHP Conditions 4 and 5 would also minimize program impacts on riparian habitat with the VHP permit area.

Nevertheless, the loss of woody riparian habitat would take years to recover following removal of trees, and western sycamore trees (which are a key component of sycamore alluvial woodland habitat) may not recruit new individuals following removal. Temporal losses of riparian function values that result in the short-term degradation of riparian habitat and/or permanent losses of woody riparian habitat may result in substantial adverse effects due to the sensitivity of woody riparian habitats and the high habitat value they provide to wildlife. However, riparian vegetation in some work sites consists of herbaceous vegetation rather than woody vegetation. Compared to woody riparian vegetation dominated by trees and shrubs, herbaceous vegetation is expected to regenerate quickly within temporary impact areas, and generally provides relatively low functions and values for most wildlife. Thus, where the program impacts herbaceous riparian vegetation, most impacts would be temporary in that they would not preclude the potential for herbaceous riparian vegetation to regrow. As a result, with the implementation of Valley Water BMPs and program-specific AMMs, impacts of program activities on non-wetland, herbaceous riparian vegetation would be **less than significant** (although impacts to herbaceous wetland vegetation, which may extend up into riparian areas from the creek channel, would be significant as discussed under Impact BIO-3 below). Implementation of Valley Water BMPs and compliance with applicable VHP conditions would reduce impacts on woody riparian habitats, including Central California sycamore alluvial woodland habitat, within the VHP permit area to less than significant levels under CEQA. VHP impact fees paid by Valley Water for VHP-covered impacts on riparian habitat would contribute to the VHP's conservation program, which includes riparian habitat restoration to offset impacts of VHP-covered activities. Riparian habitat, including Central California sycamore alluvial woodland habitat, could also be impacted outside of the current VHP permit area in Santa Clara County, San Benito County, and Merced County. Impacts on riparian habitat in San Benito County would not be reduced by SBCCP compliance unless and until the SBCCP is adopted. Thus, impacts on woody riparian habitat not covered by the VHP or SBCCP at the time those impacts occur would be **significant**.

Program activities that are not currently covered under the VHP and that can impact riparian habitats include activities located outside of the current VHP permit area in Santa Clara County, and all program activities in San Benito County and Merced County. However, the portions of the program area located outside of the current VHP permit area in Santa Clara County may be located within the VHP permit area in the future following the VHP amendment. Similarly, the SBCCP is currently being developed, and Valley Water has requested that San Benito County provide coverage for program activities in northern San Benito County. If and when these portions of the program area are covered under the VHP and/or SBCCP, the program would implement applicable conditions of these habitat plans to further reduce program impacts on riparian habitats.

Fugitive Dust

The mobilization of dust would impact plants in riparian habitat 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. AMM AIR-1 would ensure that impacts due to dust from work activities on nearby riparian habitat are minimized. With the implementation of AMM AIR-1, the impact would be **less than significant**.

Invasive Species and Pathogens

Movement of earth, vegetation, water (e.g., runoff), equipment, vehicles, and personnel could spread invasive plant propagules and pathogens such as *Phytophthora*. Invasive plants could harm riparian communities and reduce their extent and overall health. Such impacts may lead to the alteration of the communities' species composition, structure, and function. *Phytophthora* could impair the health of plants, spreading through root systems and resulting in the loss of individuals. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites. AMM BIO-4 would ensure that Valley Water personnel and contractors take measures to prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, minimizing work activities and vehicle use within natural areas, and complying with applicable guidelines related to *Phytophthora*. With the implementation of Valley Water BMPs and program AMMs, this impact would be **less than significant**.

Use of Herbicides

Vegetation management activities also would include the application of herbicides, which could impact the survival, reproduction, and growth of riparian plants. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Impacts of herbicide use are not covered by the VHP. Implementation of BMP BI-4 and AMM BIO-3 and AMM BIO-9 would avoid effects on riparian habitat. With these BMPs and AMMs, impacts of herbicide application on riparian habitat, including sycamore alluvial woodland habitat, would be **less than significant**.

Use of Hazardous Materials

Program activities 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 riparian plants. Implementation of BMP HM-8, BMP HM-9, BMP HM-10, AMM HAZ-1, AMM HAZ-2, and AMM HAZ-3 would minimize the potential for the spill of hazardous material that would kill or impair the health of riparian plants. In addition, VHP-covered activities would comply with Conditions 3, 4, and 5, which include measures to protect water quality due to spills. With the implementation of these BMPs and AMMs, and (for VHP-covered activities) compliance with applicable VHP conditions, impacts due to spills and leaks would be **less than significant**.

Water Releases

Most dewatering sites are located within the banks of streams and release directly to the stream or drain to stormwater conduits, avoiding riparian habitats. However, if the release of water during pipeline draining should occur in riparian areas, it can potentially result in the loss or damage of herbaceous riparian vegetation and destabilization of soils. Such loss of riparian vegetation on channel banks may result in an increase in erosion and sedimentation, which would increase turbidity within and downstream of the release point due to the mobilization of fine sediments. In addition, because barren slopes are more susceptible to erosion from incident rainfall, the loss of riparian vegetation may increase erosion and sedimentation at the release location until vegetation reestablishes. This in turn may lead to the filling in of pools and damage to in-stream wetland vegetation downstream. The implementation of water quality BMP WQ-1 through BMP WQ-11 and BMP WQ-15 through BMP WQ-17, as well as program-specific AMM BIO-6 and AMM HYD-1 through AMM HYD-11, would minimize impacts due to erosion and sedimentation. In addition, VHP-covered activities would comply with requirements of Conditions 4 and 5 to further protect water quality and avoid and minimize impacts to riparian habitats. With the implementation of these BMPs and AMMs, and (for VHP-covered activities) compliance with applicable VHP conditions, impacts due to erosion and sedimentation for VHP-covered activities would be **less than significant**. Outside of the VHP permit area, residual impacts due to erosion caused by vehicles would still occur and the impact would **significant**.

If Valley Water shuts down a pipeline as part of the program that (at the time of shutdown) is functioning to augment stream flows during a drought year or under other conditions when water from the pipeline is necessary to maintain instream flows, adverse effects on riparian habitat could occur due to the loss of instream aquatic habitat. These include the mortality or decline in health of vegetation and a reduction in associated wildlife communities. These impacts would be **significant**.

Overall Significance Determination for Impact BIO-2A

Significant

Mitigation for Impact BIO-2A

Following implementation of AMM BIO-1 to determine whether woody riparian vegetation could occur in a given activity area, and whether program activities would potentially impact this habitat, Valley Water will implement MM BIO-26 to reduce impacts of program activities that are not covered by a habitat plan on woody riparian vegetation, including Central California sycamore alluvial woodland habitat. In addition, MM BIO-15 provided under Impact BIO-1C above would ensure that an alternative water source is identified before shutdown commences.

If program activities are covered under the forthcoming VHP amendment or the forthcoming SBCCP, MM BIO-26 would not be needed to reduce impacts on woody riparian vegetation to less than significant levels under CEQA. Rather, the program will comply with applicable habitat plan conditions to reduce impacts.

> **MM BIO-26: Implement Compensatory Mitigation for Woody Riparian Vegetation and Permanent Stream and Wetland Impacts.** This measure will be implemented for any program activity whose impacts on woody riparian vegetation, streams, and wetlands are not covered by the VHP or SBCCP.
>
> For direct temporary and/or permanent impacts on riparian (including sycamore alluvial woodland) habitat and direct permanent impacts on stream and wetland habitats that occur in the absence of VHP and/or SBCCP coverage, impact areas will be quantified, and if necessary, compensatory mitigation will be provided. When compensatory mitigation is necessary (i.e., if it is not possible to mitigate for impacts via the payment of VHP impact fees), Valley Water proposes to provide compensation via the payment of VHP impact fees through the Habitat Agency's Voluntary Fee Payments Policy, if possible (e.g., depending on the work location and if the Habitat Agency can accommodate the mitigation), or by purchasing credits from an approved mitigation bank at a minimum 1:1 (mitigation: impact) ratio on an acreage basis for permanent impacts and a minimum 0.1:1 ratio for temporary impacts (in addition to in situ restoration of temporarily impacted areas).
>
> If the above options are not available, Valley Water would provide program activity-specific mitigation[1]. Program activity-specific mitigation will be provided by one (or a

[1] The mitigation ratios for these four options were selected to reflect the relative value of each type of mitigation, with in-kind restoration/creation having the lowest mitigation ratio to reflect its direct compensation for lost riparian and wetland habitat, and out-of-kind preservation of watershed lands having the highest mitigation ratio to reflect its more indirect value in protecting and enhancing riparian and wetland habitats.

combination) of the following methods on- or off-site (with preference to on-site or nearby off-site mitigation):

- **In-kind restoration/creation**: Valley Water will create, restore, preserve, and/or manage riparian habitats, streams, and/or wetlands, or substantially improve the quality of highly degraded riparian habitats, streams, and/or wetlands, at a minimum ratio of 1.5:1 (mitigation : impact) , or 3:1 for permanent impacts to sycamore alluvial woodland.
- **In-kind enhancement**: Valley Water will acquire, preserve, enhance, and/or manage lands that provide similar ecological functions and values to the riparian or wetland habitat impacted by program activities. The acquisition preservation, and/or enhancement of these higher-quality lands will occur at a ratio of 3:1 (mitigation : impact), or 5:1 for permanent impacts to sycamore alluvial woodland. Enhancement may include modification of existing management, limited planting, or invasive plant removal, or other activities to enhance habitat functions and values.
- **In-kind preservation**: Valley Water will acquire and manage lands that provide similar ecological functions and values to the riparian or wetland habitat impacted by program activities. The acquisition of these higher-quality lands will occur at a ratio of 3:1 (mitigation : impact), or 5:1 for permanent impacts to sycamore alluvial woodland, and may be managed by Valley Water or a partner agency in compliance with the program's mitigation requirements.
- **Out-of-kind preservation and enhancement**: Valley Water will acquire, preserve, enhance, and/or manage watershed lands which are not of the same habitat type as the impacts incurred. These lands provide more general conservation, open space, and habitat values, and will help to maintain the quality of riparian and wetland habitats downstream/downslope through management focused on benefits to the riparian/wetland environment, such as management to reduce erosion and sedimentation. Out-of-kind mitigation will occur at a ratio of minimum 8:1 (mitigation : impact), and will not be performed to mitigate impacts to sycamore alluvial woodland.

These options would be developed in an HMMP, which would be provided to agencies (e.g., the CDFW, USFWS, USACE, and/or RWQCB) for review, as applicable. A qualified biologist shall develop the HMMP describing the mitigation, which will contain the following components (or as otherwise modified by regulatory agency permit conditions):

- Mitigation design, including the expected hydrology source, planting plan, irrigation and maintenance plan, and adaptive management approach
- Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule). Success criteria will include quantifiable measurements of riparian vegetation type (e.g., dominance

by natives) and extent appropriate for the riparian restoration location, and provision of ecological functions and values equal to or exceeding those in the riparian habitat affected. At a minimum, success criteria will include following:

- At Year 5 post-planting, canopy closure at the mitigation site will be at least 50 percent of the canopy closure at a nearby reference site (i.e., a site supporting the same habitat type as that being established at the mitigation site).

For a specific extent of impact to sycamore alluvial woodland, the mitigation that is applied to that impact will focus on enhancement, preservation, and/or restoration of that sensitive community type. Similarly, when impacts to high-quality occurrences of cottonwood-dominated forest occur, Valley Water will mitigate by providing cottonwood-dominated mitigation sites. "High-quality" occurrences will be determined by a qualified botanist 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, in which case the refinements required by these resource agencies would be implemented.

Significance after Mitigation

MM BIO-26 would be implemented to reduce impacts of program activities that are not covered by a habitat plan on woody riparian vegetation, including Central California sycamore alluvial woodland habitat, to a less than significant level by replacing lost riparian vegetation through creation, restoration, preservation, and/or enhancement. The impacts on woody riparian habitat not covered by the VHP or SBCCP at the time those impacts occur would be **less than significant with mitigation incorporated**.

If Valley Water shuts down a pipeline as part of the program that (at the time of shutdown) is functioning to augment stream flows during a drought year or under other conditions when water from the pipeline is necessary to maintain instream flows, adverse effects on riparian habitat could occur due to the loss of instream aquatic habitat. Implementation of MM BIO-15 would ensure that an alternative water source is identified before shutdown commences. The impact would be **less than significant with mitigation.**

Loss or Disturbance of Serpentine Habitats and Communities (Impact BIO-2B)

Sensitive serpentine habitats and communities in the program area are located on serpentine soils within the current VHP permit area. Thus, all program impacts on serpentine habitats and communities are covered under the VHP. Serpentine habitats in the program area may support the following sensitive associations, among others:

- 41.151.04 *Nassella pulchra – Lolium perenne – Plantago erecta* Serpentine (G3/G4 – S3/S4)
- 44.108.03 *Vulpia microstachys – Plantago erecta – Calycadenia* (*truncata*, G2 S2? Y *multiglandulosa*) (G2/S2)

Because several pipelines pass through serpentine areas, program activities at these locations may result in the loss, modification, and/or disturbance of serpentine habitats over the course of the program.

As discussed under Section 3.3.1, serpentine habitats support a number of special-status plant and wildlife species. Impacts on serpentine-associated special-status plant and wildlife species resulting from disturbance or loss of serpentine habitat are addressed in separate impact discussions under Impact BIO-1 above; this section focuses on impacts due to the loss or disturbance of the serpentine habitat itself.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and limited maintenance activities that would have limited to no impacts on biological resources, including serpentine habitat. The potential for serpentine habitats to be impacted by other program activities is described below.

Ground Disturbance and Vegetation Removal

Ground disturbance and vegetation removal in support of program activities may result in direct and indirect impacts on serpentine habitat. 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. Any clearing of vegetation in support of program activities could result in the loss of serpentine-associated plant species. Pipeline dewatering, as well as the release of small volumes of water from vaults into natural upland areas (which would be extremely infrequent under the program), can potentially result in impacts on serpentine habitat. In addition, water releases potentially involve the removal of vegetation for the installation of BMPs such as visqueen spillways. Valley Water would implement BMP BI-7 to minimize impacts within vegetated areas, and BMP BI-8 requires a qualified biologist or vegetation specialist ensure that ecologically appropriate native seeding options are used, which would reduce the loss of serpentine habitat within temporary impact areas. AMM BIO-1 and AMM BIO-2 would ensure that activities with potential to affect serpentine habitat are identified; appropriate protective measures (i.e., BMPs, AMMs, VHP conditions, and mitigation measures) are implemented; and employees and contractors are trained on protective measures. Compliance with VHP Condition 13 would also minimize program impacts on serpentine habitat in all locations where it occurs in the program area.

All impacts of the program on serpentine habitat are covered under the VHP. VHP impact fees paid by Valley Water for VHP-covered impacts on serpentine habitat would contribute to the VHP's conservation program, which includes conservation, enhancement, and management of serpentine habitat to offset impacts of VHP-covered activities. With the implementation of Valley Water BMPs, program-specific AMMs, and applicable VHP conditions, as well as the payment of VHP land cover fees and serpentine specialty fees, impacts of PMP activities on serpentine habitat would be **less than significant**.

Fugitive Dust
The mobilization of dust would impact plants in serpentine habitat 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. AMM AIR-1 would ensure that impacts due to dust from work activities on nearby serpentine habitat would be minimized. With the implementation of AMM AIR-1, this impact would be **less than significant**.

Invasive Species and Pathogens
Movement of earth, vegetation, water (e.g., runoff), equipment, vehicles, and personnel could spread invasive plant propagules in serpentine habitats. Invasive plants could harm serpentine communities and reduce their extent and overall health. Such impacts may lead to the alteration of serpentine communities' species composition, structure, and function. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites. AMM BIO-4 would ensure that Valley Water and its contractors implement measures to prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, and minimize work activities and vehicle use within natural areas. With the implementation of Valley Water BMPs and program AMMs, this impact would be **less than significant**.

Use of Herbicides
Vegetation management activities also would include the application of herbicides, which could impact the survival, reproduction, and growth of serpentine plants. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Impacts of herbicide use are not covered by the VHP. Implementation of BMP BI-4, AMM BIO-3, and AMM BIO-9 would avoid and minimize these effects within serpentine habitats. Impacts of herbicide application on serpentine habitat would be **less than significant.**

Use of Hazardous Materials
Program activities 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 serpentine-associated plants. The implementation of BMP HM-8, BMP HM-9, BMP HM-10, AMM HAZ-1, AMM HAZ-2, and AMM HAZ-3 across the program area and compliance with required VHP conditions in VHP-covered program areas would minimize the potential for the spill of hazardous material that would kill or impair the health of serpentine plants. Impacts due to spills and leaks would be **less than significant**.

Nitrogen Deposition
Indirect effects of program activities on serpentine habitat can also 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. Nitrogen emitted by maintenance vehicles and equipment may impact serpentine habitats within or downwind of areas where the nitrogen is emitted. Valley Water estimates an average of 67 daily vehicle trips would be necessary to support the program, inclusive of all VHP-covered and non-VHP covered activities. There is some potential for nitrogen emitted by maintenance vehicles and equipment to contribute to cumulative nitrogen deposition impacts on serpentine habitat. For VHP-covered activities (which include the majority of program activities), the VHP mitigates nitrogen deposition impacts via the payment of nitrogen deposition fees for new vehicle trips. Program activities 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 activities are mitigated by the VHP even though the program's nature does not necessitate payment of VHP nitrogen deposition fees. As a result, impacts due to nitrogen deposition from VHP-covered program activities would be **less than significant**.

For non-VHP-covered activities, no impacts on serpentine habitats would occur outside of the current VHP permit area in Santa Clara County. In addition, such activities occurring in and outside of Santa Clara County would be limited and would therefore result in limited nitrogen emissions. As a result, any impacts due to nitrogen deposition from activities not covered under the VHP would be minimal, and **less than significant**.

Water Releases

If the release of water during pipeline draining should occur in serpentine habitat, it can potentially result in the loss or damage of serpentine-associated plants and destabilization of serpentine soils. In addition, because barren slopes are more susceptible to erosion from incident rainfall, the loss of serpentine vegetation may increase erosion and sedimentation at the release location until vegetation reestablishes. To minimize erosion, Valley Water would implement program-specific AMMs HYD-1, HYD-3, HYD-4, HYD-5, HYD-6, HYD-9, and HYD-10 throughout the program area and comply with required VHP conditions in VHP-covered program areas. With the implementation of these measures, erosion within serpentine areas would be effectively minimized, and the impact would be **less than significant**.

Overall Significance Determination for Impact BIO-2B

Less than Significant

Mitigation for Impact BIO-2B

No mitigation would be required for Impact BIO-2B.

Loss or Disturbance of Alkaline Grassland (Impact BIO-2C)

Sensitive alkaline grassland habitat is located in the vicinity of San Felipe Lake in the program area. This habitat may support the following sensitive associations in the program area, among others:

- 44.119.06 Hordeum (*depressum*, *murinum* ssp. *leporinum*) (G2/S2)

- 42.052.02 *Hordeum brachyantherum – Polypogon monspeliensis* (GNR/S4)

Because the Santa Clara Conduit passes through alkaline grassland areas, program activities along this pipeline may result in the loss, modification, and/or disturbance of alkaline grassland habitats over the course of the program. All program impacts on alkaline grassland habitat would occur in San Benito County, and therefore impacts to this habitat are not covered under the VHP, but may be covered under the SBCCP in the future.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program are day-to-day inspection and limited maintenance activities that would have limited to no impacts on biological resources, including alkaline grassland habitat. The potential for alkaline grassland habitat to be impacted by other program activities is described below.

Ground Disturbance and Vegetation Removal

Ground disturbance and vegetation removal in support of program activities may result in direct and indirect impacts on alkaline grassland habitat. 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. Any clearing of vegetation in support of program activities could result in the loss of alkaline grassland-associated plant species. Pipeline dewatering, as well as the release of small volumes of water from vaults into natural upland areas (which would be extremely infrequent under the program), can potentially result in impacts on alkaline grassland habitat. In addition, water releases potentially involve the removal of vegetation for the installation of BMPs such as visqueen spillways. Valley Water would implement BMP BI-7 to minimize impacts within vegetated areas, and BMP BI-8 requires a qualified biologist or vegetation specialist ensure that ecologically appropriate native seeding options are used, which would reduce the loss of alkaline grassland habitat within temporary impact areas. AMM BIO-1 and AMM BIO-2 would ensure that activities with potential to affect alkaline grassland habitat are identified; appropriate protective measures (i.e., BMPs, AMMs, and mitigation measures) are implemented; and employees and contractors are trained on protective measures. Implementation of these Valley Water BMPs and program-specific AMMs would reduce program impacts on alkaline grassland habitat. However, due to the sensitivity of this habitat and its limited extent in the surrounding region, program impacts that permanently reduce the extent of this grassland and potentially lead to its extirpation in the area would result in a substantial adverse effect. Because such an impact would contribute to a substantial reduction in the extent of this grassland, program impacts on more than 10 percent of the total extent (by acreage) of alkaline grassland in the limited, localized area where it occurs would be **significant**.

Fugitive Dust

The mobilization of dust would impact plants in alkaline grassland habitat 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. AMM AIR-1 would ensure that impacts due to dust from work activities on nearby

alkaline grassland habitat is minimized. With the implementation of AMM AIR-1, this impact would be **less than significant**.

Invasive Species and Pathogens

Movement of earth, vegetation, water (e.g., runoff), equipment, vehicles, and personnel could spread invasive plant propagules in alkaline grassland habitats. Invasive plants could harm alkaline grassland communities and reduce their extent and overall health. Such impacts may lead to the alteration of alkaline grassland communities' species composition, structure, and function. BMP HM-7 would ensure that vehicles are cleaned in appropriate locations to avoid spreading pathogens and invasive plants between work sites. AMM BIO-4 would ensure that Valley Water personnel and contractors take measures to prevent the spread of invasive plants and pathogens by washing and decontaminating vehicles and equipment, and minimizing work activities and vehicle use within natural areas. Furthermore, compliance with required VHP conditions in VHP-covered program areas would also reduce potential spread of invasive plants and pathogens. With the implementation of Valley Water BMPs and program AMMs, this impact would be **less than significant**.

Use of Herbicides

Vegetation management activities also would include the application of herbicides, which could impact the survival, reproduction, and growth of alkaline grassland plants. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Implementation of BMP BI-4 and AMM BIO-3 would avoid potential direct and indirect effects of herbicides on alkaline grassland plants and ensure that herbicide application is avoided in sensitive habitats. Thus, no native herbaceous vegetation or sensitive habitat would be removed by herbicide application under the program. With the implementation of Valley Water BMPs and program AMMs, impacts of herbicide application on alkaline grassland habitat would be **less than significant**.

Use of Hazardous Materials

Program activities 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 alkaline grassland habitat and associated plants. The implementation of BMP HM-8, BMP HM-9, BMP HM-10, AMM HAZ-1, AMM HAZ-2, and AMM HAZ-3 across the program area and compliance with required VHP conditions in VHP-covered program areas would minimize the potential for the spill of hazardous material that would kill or impair the health of alkaline grassland plants. With the implementation of these BMPs and AMMs, impacts due to spills and leaks would be **less than significant**.

Water Releases

If the release of water during pipeline draining should occur in alkaline grassland habitat, it can potentially result in the loss or damage of associated plants and destabilization of soils. In addition, because barren slopes are more susceptible to erosion from incident rainfall, the loss of

alkaline grassland vegetation may increase erosion and sedimentation at the release location until vegetation reestablishes. To minimize erosion, Valley Water would implement program-specific AMMs HYD-1, HYD-3, HYD-4, HYD-5, HYD-6, HYD-9, and HYD-10 throughout the program area and comply with required VHP conditions in VHP-covered program areas. With the implementation of these measures, erosion within alkaline grassland areas would be effectively minimized, and this impact would be **less than significant**.

If the release of water during pipeline draining should occur in alkaline grassland habitat, it can potentially result in the loss or damage of alkaline grassland-associated plants and destabilization of soils. In addition, because barren slopes are more susceptible to erosion from incident rainfall, the loss of alkaline grassland vegetation may increase erosion and sedimentation at the release location until vegetation reestablishes. Valley Water would implement program-specific AMMs HYD-1, HYD-3, HYD-4, HYD-5, HYD-6, HYD-9, and HYD-10 throughout the program area and comply with required VHP conditions in VHP-covered program areas to avoid and minimize effects of erosion. With the implementation of these measures, erosion within alkaline grassland areas would be effectively minimized, and this impact would be **less than significant**.

Overall Significance Determination for Impact BIO-2C
Significant

Mitigation for Impact BIO-2C
Following implementation of AMM BIO-1 to determine whether alkaline grassland habitat could occur in a given activity area, and whether the planned activities would potentially impact this habitat, Valley Water will implement MMs BIO-27 and BIO-28 below to reduce program impacts on this habitat.

If program activities in a given work area are covered under the forthcoming SBCCP, MM BIO-27 and MM BIO-28 below would not be needed to reduce impacts to less than significant levels under CEQA. Rather, the program will comply with applicable habitat plan conditions to reduce impacts.

> **MM BIO-27. Avoidance of Alkaline Grassland.** This measure will be implemented for any program activity whose impacts on alkaline grassland are not covered by the SBCCP.
>
> When designing program activities, Valley Water shall avoid impacts to alkaline grassland, or at least minimize such impacts, to the extent practicable while still completing the required work, as determined by work personnel in consultation with a qualified biologist. If all impacts on this habitat are avoided, MM BIO-28 is not necessary. If any alkaline grassland will be impacted by activities that are not covered under the SBCCP, MM BIO-28 will be implemented.

MM BIO-28. Compensate for the Loss of Alkaline Grassland. This measure will be implemented for any program activity whose impacts on alkaline grassland are not covered by the SBCCP.

If avoidance of alkaline grassland habitat is not feasible and more than 10 percent of the local extent of this grassland (as mapped by a qualified botanist) would be permanently impacted, compensatory mitigation will be provided by purchasing credits from an approved mitigation bank at a minimum 1:1 (mitigation: impact) ratio, or via the creation, enhancement, and/or preservation of alkaline grassland habitat. Creation of new alkaline grassland habitat or enhancement of low-quality habitat would be provided at a minimum 1.5:1 (mitigation: impact) ratio; preservation and management of high-quality alkaline grassland habitat would be provided at a minimum 1:1 (mitigation: impact) ratio.

A HMMP will be developed by qualified plant or restoration ecologists and implemented for the mitigation lands. At a minimum, the HMMP will contain the following components (or as modified by regulatory agency permit conditions):

- Summary of habitat impacts and proposed mitigation ratios
- Location of mitigation site(s) and description of existing site conditions
- Mitigation design, including the expected hydrology source, planting plan, irrigation and maintenance plan, and adaptive management approach
- Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule). Success criteria will include quantifiable measurements of riparian vegetation type (e.g., dominance by natives) and extent appropriate for the riparian restoration location, and provision of ecological functions and values equal to or exceeding those in the riparian habitat affected. At a minimum, success criteria will include the following:
  - At Year 5 post-planting, alkaline grassland coverage at the mitigation site will be at least 50 percent of the coverage at a nearby reference site (i.e., a site supporting the same habitat type as that being established at the mitigation site).

Significance after Mitigation

Implementation of MM BIO-27 would reduce program impacts on alkaline grassland habitat that are not covered under the SBCCP by avoiding these habitats during design to the extent practicable. If avoidance is not feasible, MM BIO-28, which requires compensation for loss of alkaline grassland by purchasing credits from an approved mitigation bank or via the development of an HMMP, would be implemented. The impact would be **less than significant with mitigation incorporated.**

Impact BIO-3: 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 (less than significant with mitigation incorporated)

Sensitive wetland and aquatic habitats are located throughout the program area. Coastal and valley freshwater marsh habitats in the program area may support the following sensitive associations, among others:

- 52.128.02 *Schoenoplectus* (*acutus*, *californicus*) – *Typha* (*angustifolia*, *latifolia*) (GNR-S3/S4)
- 52.122.06 *Schoenoplectus acutus* – *Xanthium strumarium* (GNR-S3/S4)
- 41.200.21 *Distichlis spicata* (*Baccharis douglasii* – *Equisetum hymenale*) (GNR/S4)

Seasonal wetland habitats in the program area may support the following sensitive associations, among others:

- 52.500.04 *Frankenia salina* – *Distichlis spicata* (G4/S3)
- 1.200.18 *Distichlis spicata* – *Hordeum murinum* (GNR/S4)

Program activities occurring along streams or in wetlands may impact aquatic and wetland communities through the direct or indirect disturbance of vegetation and the disturbance, modification, or destruction of habitat.

As discussed under *Existing Conditions* above, stream and wetland habitats in the program area provide a wide range of biological functions for fish and wildlife, and for some special-status plants. Thus, impacts on stream and wetland habitats would also impact a variety of fish and wildlife species that occur in those habitats. Impacts on special-status plant and animal species resulting from the disturbance or loss of wetlands and aquatic habitats are addressed in separate impact discussions under Impact BIO-1 above. This section focuses on impacts due to the loss or disturbance of the stream and wetland habitats themselves.

As discussed under *Quantification of Impacts* above, the majority of activities conducted under the program would be day-to-day inspection and maintenance activities that would have limited to no impacts on biological resources, including wetlands and other waters. The potential for wetlands and aquatic habitats to be impacted by other program activities is described below.

Ground Disturbance and Vegetation Removal

Ground disturbance and vegetation removal in support of maintenance activities may result in direct and indirect impacts on wetlands and aquatic habitats. 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. Wetland vegetation that is removed by program activities is expected to regrow unless program activities would require the permanent exclusion of vegetation. Thus, most program impacts to wetland vegetation would be temporary in that they would not preclude the potential for this vegetation to regrow, and

wetland vegetation is likely to be re-established quickly (e.g., within one year) following temporary impacts. Nevertheless, any clearing of wetland vegetation in support of program activities would result in the temporary loss of key habitat features, and the permanent conversion of wetlands to non-wetlands (e.g., due to bank stabilization activities) would result in the permanent loss of this habitat. Valley Water would implement BMPs BI-7, WQ-1, WQ-2, WQ-8, WQ-9 to minimize impacts within wetlands, BMP BI-3 to ensure that channels and banks would be re-contoured following work, and BMP BI-8 requires a qualified biologist or vegetation specialist ensure that ecologically appropriate native seeding options would be used, which would reduce the loss of wetland habitat within temporary impact areas. AMMs BIO-1 and BIO-2 would ensure that activities with potential to affect wetland habitats would be identified; appropriate protective measures (i.e., BMPs, AMMs, VHP conditions, and Mitigation Measures) would be implemented; and employees and contractors would be trained on protective measures. Compliance with VHP Conditions 3, 4, 5, and 12 would also minimize program impacts on wetland habitats within the VHP permit area. With the implementation of Valley Water BMPs, compliance with applicable VHP conditions, and payment of VHP impact fees, including wetland specialty fees, impacts on wetlands within the VHP permit area would be **less than significant**. VHP impact fees paid by Valley Water for VHP-covered impacts on wetlands and aquatic habitats would contribute to the VHP's conservation program, which includes wetland creation and restoration to offset impacts of VHP-covered activities and thus would provide compensatory mitigation for wetland impacts. However, outside of the current VHP permit area in Santa Clara County, as well as in San Benito County and Merced County, residual impacts would remain due to the temporal loss of wetland functions and values and permanent loss of wetland vegetation. Nevertheless, the vast majority of impacts to wetlands in the Program area would be short-term, because vegetated marsh would restore to existing conditions within 1-2 years following work activities. Because stream systems in the Program area are dynamic, the extent of wetland habitats changes constantly as part of natural processes, and disturbance from work 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 work activities, restoring the channel to typical conditions following the completion 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 and bulrush produce airborne seeds that re-establish quickly following disturbance. Due to these combined factors, temporary impacts of the program on instream freshwater wetlands (i.e., coastal and valley freshwater marsh) would be **less than significant**. However, permanent impacts that result in the loss of these habitats would be considered **significant** because it would result in the loss of ecologically valuable wetlands.

The portions of the program area located outside of the current VHP permit area in Santa Clara County may be located within the VHP permit area in the future following the VHP amendment in progress. Similarly, the SBCCP is currently being developed, and Valley Water has requested that San Benito County provide coverage for program activities in northern San Benito County. If and when these portions of the program area are covered under the VHP

and/or SBCCP, the program would comply with applicable conditions of these habitat plans to further reduce program impacts on wetlands and aquatic habitats.

Fugitive Dust

The mobilization of dust would impact plants in wetland habitat 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. AMM AIR-1 would ensure that impacts due to dust from work activities on nearby riparian habitat would be minimized. With the implementation of AMM AIR-1, this impact would be **less than significant**.

Invasive Species and Pathogens

Movement of earth, vegetation, water (e.g., runoff), equipment, vehicles, and personnel could spread invasive plant propagules. Invasive plants could harm wetland communities and reduce their extent and overall health. Such impacts may lead to the alteration of the communities' species composition, structure, and function. BMP HM-7 would ensure that vehicles would be cleaned in appropriate locations to avoid spreading invasive plants between work sites. AMM BIO-4 would ensure that Valley Water personnel and contractors take measures to prevent the spread of invasive plants by washing and decontaminating vehicles and equipment, and minimizing work activities and vehicle use within natural areas. Furthermore, compliance with required VHP conditions in VHP-covered program areas would also reduce potential spread of invasive plants and pathogens. With the implementation of these measures, the impact would be **less than significant**.

Use of Herbicides

Vegetation management activities also would include the application of herbicides, which have the potential to result in impacts on wetland habitat as a direct effect on the survival, reproduction, and growth of wetland plants. However, herbicides would be applied only to nonnative vegetation as part of the program, with the exception of direct application to mechanically cut woody stumps (e.g., using a sponge) to inhibit growth where such vegetation is inhibiting access. Impacts of herbicide use would be not covered by the VHP. Implementation of BMP BI-4 and AMMs BIO-3 and BIO-9 would avoid potential direct and indirect effects of herbicides on sensitive wetland habitat. Thus, no native herbaceous vegetation, including wetland vegetation, or sensitive wetland habitat would be removed by herbicide application under the program. With the implementation of these BMPs and AMMs, impacts of herbicide application on wetland habitat would be **less than significant**.

Use of Hazardous Materials

Program activities 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 wetland plants. The implementation of BMPs HM-8, HM-9, and HM-10 as well as AMMs HAZ-1, HAZ-2, and HAZ-3 would minimize the potential for the spill of hazardous material that would kill or impair the health of wetland plants. In addition, VHP Conditions 3 and 5 include measures to protect water quality due to

the spill of hazardous materials. With the implementation of Valley Water BMPs, program AMMs, and (for VHP-covered projects) applicable VHP conditions, impacts due to spills and leaks would be **less than significant**.

Water Releases

If the release of water during pipeline draining should occur within or upstream of wetland areas, it can potentially result in the loss or damage of wetland vegetation. Such loss of wetland vegetation would also increase turbidity within and downstream of the release point due to the mobilization of fine sediments. For smaller and/or seasonal wetlands, scour as a result of pipeline draining could potentially alter the size and hydrology of the wetland. The implementation of water quality BMPs WQ-1 through WQ-11 and WQ-15 through WQ-17, as well as program-specific AMMs BIO-6 and HYD-1 through HYD-11, would minimize impacts due to erosion and sedimentation. In addition, VHP-covered activities would comply with requirements of Conditions 4 and 5 to further protect water quality and avoid and minimize impacts to wetland habitats. With the implementation of these BMPs and AMMs, and (for VHP-covered activities) compliance with applicable VHP conditions, impacts due to erosion and sedimentation within the VHP permit area would be **less than significant**. However, outside of the VHP permit area, Valley Water residual impacts due to erosion caused by vehicles would still remain. The impact would be **significant**.

If Valley Water shuts down a pipeline as part of the program that (at the time of shutdown) is functioning to augment stream flows during a drought year or under other conditions when water from the pipeline is necessary to maintain instream flows, adverse effects could occur due to the temporary loss of wetlands downstream of the pipeline release location. These include the mortality or decline in health of vegetation, and a reduction in associated wildlife communities. The temporary impact to wetlands would be **less than significant**, per the discussion above.

All work within the bed and banks of streams would occur when the channel is dry, or following dewatering of the channel section. Thus, the temporal loss of wetland functions and values as a result of mechanical or physical clearing of work and access areas and compaction by equipment in wetland areas would be limited. In addition, the implementation of BMP BI-3 would ensure that impacts to habitats within the channel would be minimized, and BMP BI-9 would ensure that channels would be re-contoured following the work. Valley Water BMPs WQ-1 through WQ-11 and WQ-15 through WQ-17, as well as program-specific AMMs HYD-1 through HYD-6 and HYD-9 through HYD-11 would avoid and minimize impacts to water quality and wetlands within and downstream of work areas. With the implementation of these measures, impacts due to water quality within and downstream of work areas would be effectively minimized, and **less than significant**. In addition, per the discussion above, impacts due to the temporal loss of wetland functions and values during the work would be **less than significant**.

Overall Significance Determination for Impact BIO-3

Significant

Mitigation for Impact BIO-3
Following implementation of AMM BIO-1 to determine whether wetlands and other waters could occur in a given activity area, and whether planned activities would potentially impact these habitats, Valley Water would implement MM BIO-26 provided under Impact BIO-2A above to reduce impacts on these habitats. In addition, MM BIO-15 would ensure that an alternative water source is identified and used in situations when a pipeline is shut down and water from the pipeline is necessary to augment instream flows supporting wetland habitats, and MM BIO-19 would ensure that seasonal wetlands would be identified and impacts to such features would be minimized outside of the VHP permit area.

If program activities in a given work area are covered under the forthcoming VHP amendment or the forthcoming SBCCP, MM BIO-19 and BIO-26 would not be needed to reduce impacts to less than significant levels under CEQA. Rather, the program will comply with applicable habitat plan conditions to reduce impacts. MM BIO-25 would still be implemented to ensure that an alternative water source is identified and used in situations when a pipeline is shut down and water from the pipeline is necessary to augment instream flows supporting wetland habitats.

Significance after Mitigation
Residual impacts from the permanent loss of wetland vegetation from non-VHP and non-SBCCP-covered program activities would be minimized with implementation of MM BIO-26. This measure would replace lost wetlands habitats through restoration, preservation, and/or enhancement. In addition, MM BIO-19 would ensure that wetlands would be identified and impacts to such features would be minimized outside of the VHP permit area. As a result, permanent program impacts on wetland and aquatic habitats would be **less than significant with mitigation incorporated**.

Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (less than significant)

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. Within urban portions of the program area, creeks represent the only (or at least highest-quality) habitat available to many species for movement across the valley floor. Outside of these areas, the program area includes natural habitats such as oak woodlands, grasslands, and scrub that function as pathways for terrestrial wildlife movement, and program activities can potentially impact species moving across the major regional movement corridors discussed under *Wildlife Movement and Habitat Connectivity* above. Activities that fragment natural habitats (i.e., break them into smaller, disjunct pieces) can have a twofold impact on wildlife: 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). However, program activities would not be expected to alter these communities and corridors due to the extremely limited extent of disturbance that would occur as a result of any one activity, or even a combination of activities. Thus, program activities would not create barriers to wildlife movement.

Program activities that result in disturbance due to personnel and vehicle activity and/or temporary and permanent habitat modifications can potentially disrupt wildlife movement in the program area. However, the disruption associated with any activity, or combination of activities, occurring under the program at a given time is not expected to be so extensive as to prevent the movement of wildlife along streams, or along major movement corridors in the region. Common wildlife species may also be somewhat acclimated to existing conditions as they have been caused by program activities ongoing over the past 15 years. In addition, habitat modifications associated with the program would not be so extensive as to create barriers to wildlife movement or remove large areas of habitat and result in a loss of connectivity. Thus, the effects of program activities on both common and special-status wildlife species, including large mammals such as tule elk, mountain lions, and others, would be **less than significant**.

The program would not cause significant impacts to any important native wildlife nursery sites (i.e., an area where breeding is concentrated such as a heron rookery, pinniped pupping area, or seabird colony). Impacts on breeding animals, including breeding colonies of animals (e.g., bat maternity colonies and swallow colonies), may occur as described in Impacts BIO-1B, 1C, 1D, 1F, and 1G 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". Furthermore, with implementation of Valley Water BMPs and program AMMs, compliance with VHP conditions (for VHP-covered projects), and implementation of the mitigation measures described in those impact sections, all impacts of the program on breeding animals would be **less than significant**. For VHP-covered projects, VHP impact fees paid by Valley Water for VHP-covered impacts would contribute to the VHP's conservation program, 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 impacts on wildlife movement.

The portions of the program area located outside of the current VHP permit area in Santa Clara County may be located within the VHP permit area in the future following the VHP amendment in progress. Similarly, the SBCCP is currently being developed, and Valley Water has requested that San Benito County provide coverage for program activities in northern San Benito County. If and when these portions of the program area are covered under the VHP and/or SBCCP, the program would implement applicable conditions of these habitat plans to further reduce program impacts on wildlife movement and nursery sites.

Overall Significance Determination for Impact BIO-4
Less than Significant

Mitigation for Impact BIO-4
No mitigation would be required for Impact BIO-4.

Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (less than significant)

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 the program area. 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 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.

Valley Water would remove ordinance-size trees in support of general tasks, pipeline draining tasks, and pipeline system infrastructure maintenance and repair tasks. Tree removal can potentially occur throughout the program area. As discussed under *Local Regulations, Policies, and Standards* above, Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various localities within the program 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 is voluntarily proposing to plant replacement trees consistent with local ordinance requirements in the unlikely event that tree removal is necessary to support program activities. The impact would be **less than significant**.

Overall Significance Determination for Impact BIO-5
Less than Significant

Mitigation for Impact BIO-5
No mitigation would be required for Impact BIO-5.

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)

Valley Water is a signatory to the VHP, which is a Habitat Conservation Plan and Natural Community Conservation Plan. As described in Section 3.3.2, the program is considered a "covered project" under the VHP. The program would adhere to all applicable VHP conditions

during program activities, as discussed above. Conditions applicable to the program 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), 11 (stream and riparian setbacks), 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, the program would not be in conflict with the VHP.

No other adopted HCPs, NCCPs, or any other approved local, regional, or state habitat conservation plans or natural community conservation plans, apply to the program. San Benito County is in the process of preparing a conservation plan, the SBCCP, and Valley Water has requested that San Benito County provide for Valley Water program activities in northern San Benito County to gain coverage under the SBCCP as a Participating Special Entity. If and when the SBCCP is approved and these portions of the program area are covered under the SBCCP, the program would implement applicable conditions of this habitat plan to further reduce program impacts on covered special-status species and habitats. Therefore, the program would not be in conflict with the SBCCP. The impact would be **less than significant**.

Overall Significance Determination for Impact BIO-6
Less than Significant

Mitigation for Impact BIO-6
No mitigation would be required for Impact BIO-6.

3.4 Hazards and Hazardous Materials

This section provides an overview of the hazards and hazardous materials in the program area; applicable regulations, policies, and standards; and a discussion of the program's potential impacts related to hazards and hazardous materials. Potential hazards addressed in this section include releases of hazardous materials from equipment and materials during construction, demolition, and operation, exposure to hazardous materials from existing hazardous materials sites, wildfires, airport safety, and emergency access and response plans.

3.4.1 Definitions

In this document, hazardous materials and wastes are defined as follow:

- **Hazardous Material**: This includes hazardous materials, hazardous substances, hazardous wastes, and any material that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. Section 25501(n) of the California Health and Safety Code defines hazardous material as "any material that, because of its quantity, concentrations, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment."
- **Hazardous Waste:** This is a waste that, "because of its quantity, concentration, or physical, chemical, or infectious characteristics, causes or significantly contributes to an increase in mortality or illness or poses substantial or potential threats to public health or the environment" (42 U.S. Code [USC] 6903[5]). Hazardous wastes are further defined under the Resource Conservation and Recovery Act (RCRA) as "substances exhibiting the characteristics of ignitability, reactivity, corrosivity, or toxicity." Chemical-specific concentrations that are used to define whether a material is a hazardous, designated, or nonhazardous waste include Total Threshold Limit Concentrations (TTLCs), Soluble Threshold Limit Concentrations (STLCs), and Toxic Characteristic Leaching Procedures (TCLPs), listed under Title 22, Chapter 11, Article 3, Section 66261 of the CCR, which are used as waste acceptance criteria for landfills. Waste materials with chemical concentrations above TTLCs, STLCs, and TCLPs must be sent to Class I disposal facilities, may be sent to Class II disposal facilities depending on the waste material, and may not be sent to Class III disposal facilities.[1]

[1] Class I disposal facilities are specifically for hazardous waste, as defined under Title 22 of the CCR. Class II facilities are "designated" waste facilities, and special permitting must be acquired for them to accept designated types of hazardous materials. Class III disposal facilities are strictly for non-hazardous waste (Title 23 CCR Division 3, Chapter 15).

3.4.2 Environmental Setting

This environmental setting section defines the types of materials that constitute hazardous materials, in accordance with applicable regulatory definitions, and provides an overview of hazardous materials sites, schools, airports, and emergency evacuation routes in the program area, including Santa Clara County, a limited section of eastern Merced County in which a 2.5-mile segment of the Pacheco Conduit is located, and the approximately 2-mile segment of the Santa Clara Conduit in San Benito County.

Contaminated Sites and Underground Storage Tanks

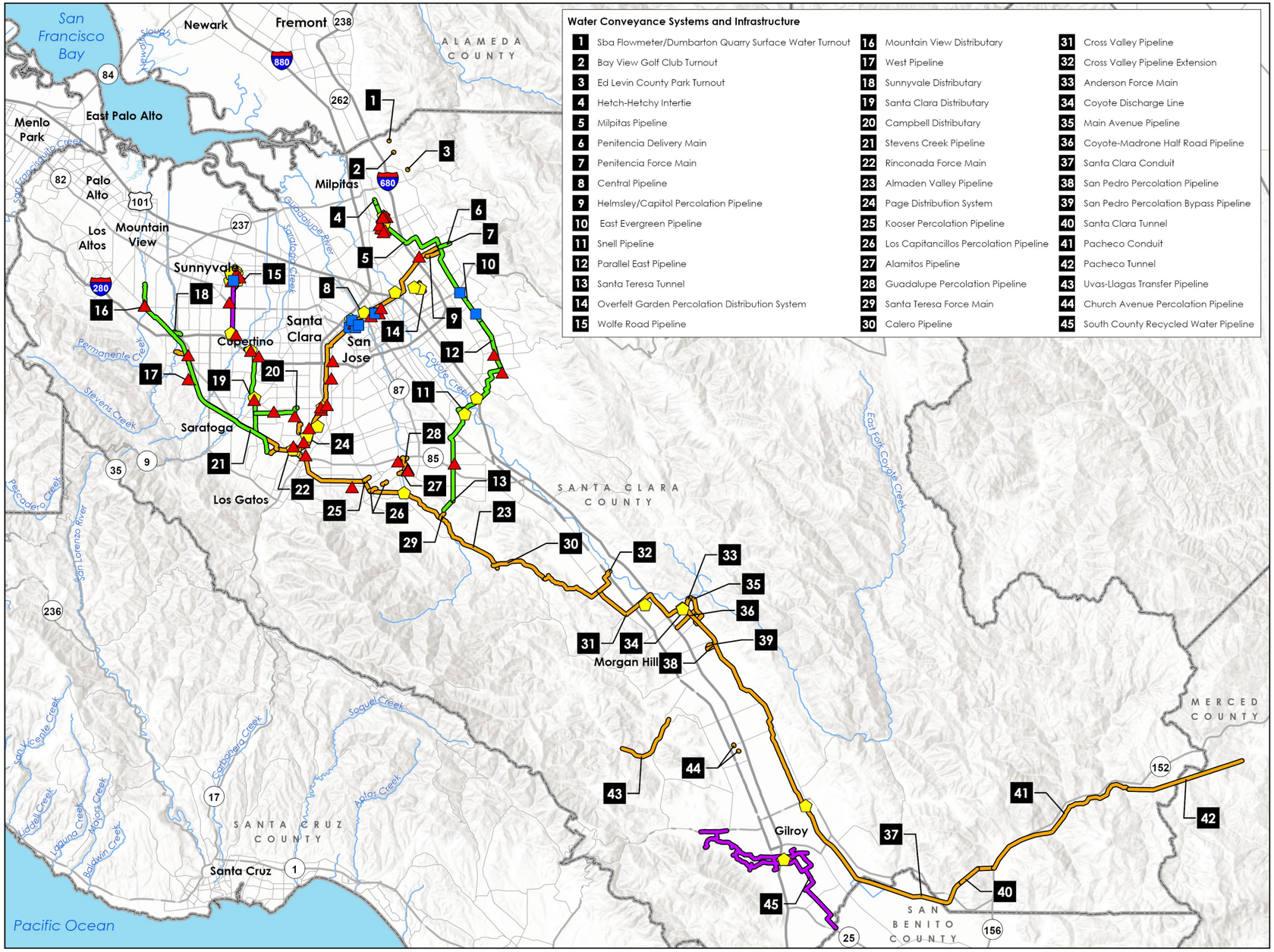
The SWRCB GeoTracker and Department of Toxic Substances Control's (DTSC) EnviroStor databases were reviewed to identify any open, cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination or sites where reasons may exist to investigate further. As shown in Figure 3.4-1, 56 open EnviroStor cleanup sites, 46 open GeoTracker cleanup program sites, and 10 open GeoTracker leaking underground storage tank (LUST) cleanup sites are within 0.25 mile of program pipelines (DTSC 2023; SWRCB 2023).

Hazardous materials release sites are found throughout the urban areas of the incorporated cities in Santa Clara County. Of particular concern are Superfund sites, which include properties where chemical waste dumping has been intensive or is continuous. Contamination at these sites potentially has affected groundwater, surface water, soil, and/or air quality conditions Although 23 Superfund sites are within the urban environments of Santa Clara County, none are within 0.25 mile of program pipelines or infrastructure (US EPA 2021).

Naturally Occurring Asbestos

Asbestos is a term used for several naturally occurring fibrous minerals. Asbestos most commonly occurs in, and immediately adjacent to, areas of ultramafic rock that has undergone partial or complete alteration to serpentinites. Serpentinite is a type of rock consisting almost entirely of one or more serpentine minerals. This rock type has a greasy or waxy appearance and may be dark to light green, brown, yellow, or white.

Figure 3.4-1 Hazardous Sites within 0.25 Mile of Program Pipelines



Hazardous Sites

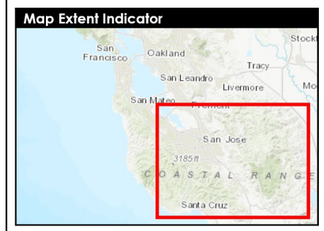
- Geotracker Cleanup Site*
- Geotracker LUST Cleanup Site*
- Envirostor Cleanup Site*†
- Raw Water Pipeline
- Recycled Water Pipeline
- Treated Water Pipeline
- Waterbody
- County Boundary

* Closed sites and sites where no further remedial action is required are not shown.

† Envirostor statuses shown in the map are listed below:
- Active
- Certified
- Certified/Operation and Maintenance
- Certified O+M - Land Use Restrictions Only
- Refer: Other Agency
- Refer: RCRA
- Refer: RWQCB

Data Sources:

Department of Toxic Substances Control, 2021
State Water Resources Control Board, 2022



Scale = 1:272,000
0 3 5 Mi
Date Created: 9/12/2023
PANORAMA

Source: DTSC 2021

Chrysotile asbestos is a common mineral found in serpentine soils and serpentinite rock in California.

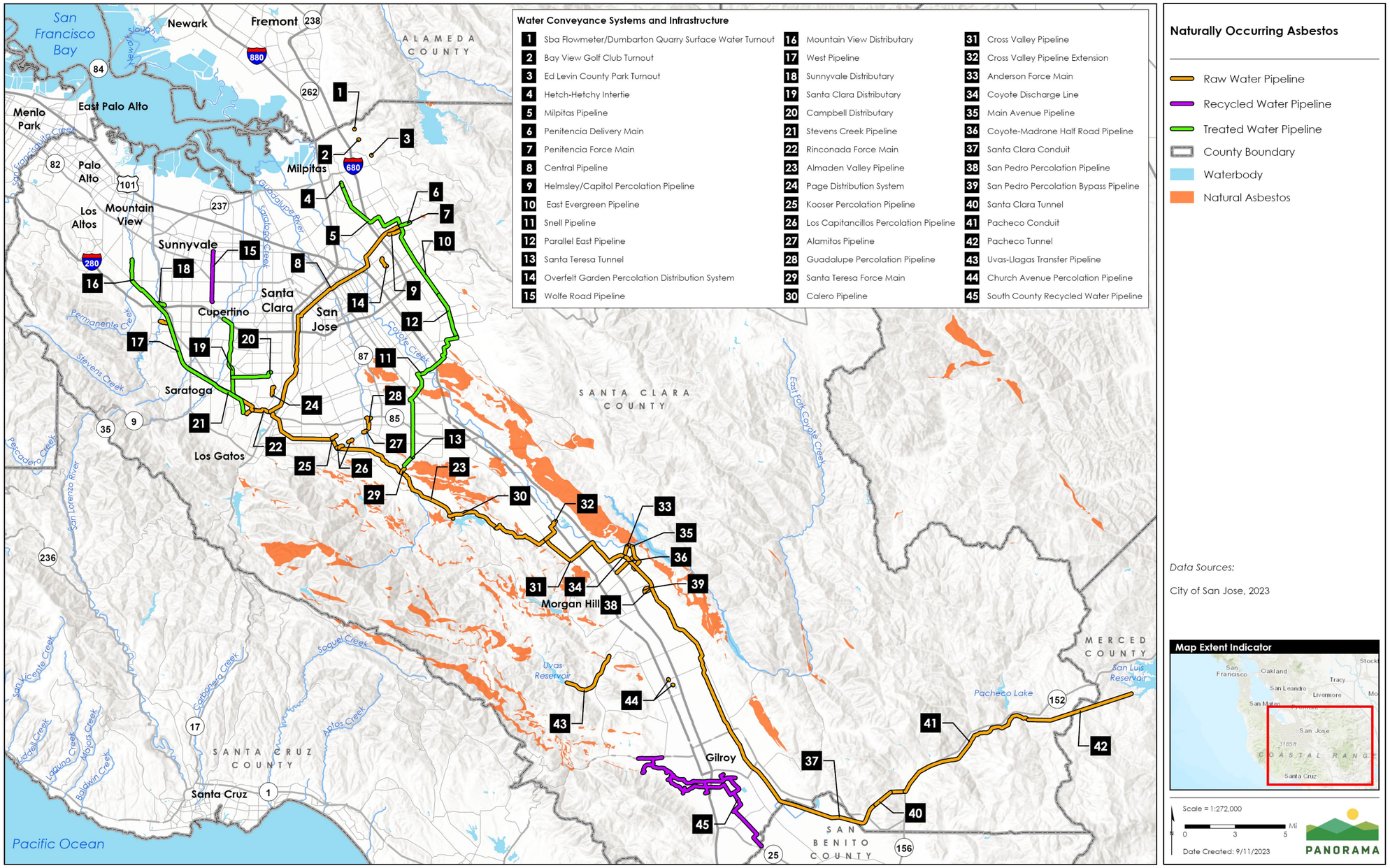
Areas known to contain naturally occurring asbestos (NOA) in the program area are shown in Figure 3.4-2. Airborne asbestos fibers can pose significant air quality-related health risks, which are discussed in detail in Section 3.8, Air Quality.

Mercury

The Guadalupe River Watershed in Santa Clara County has been strongly influenced by historic large-scale mercury mining, associated with the former New Almaden Mining District, which was North America's oldest and most productive mercury mine. Although active mercury mining in the area ended by 1970, waste material and sediments contaminated with mercury persists, contributing mercury to downstream surface waters and the San Francisco Bay. Valley Water manages and operates four water bodes affected by historical mining operations in the Guadalupe River Watershed—the Almaden, Calero, and Guadalupe reservoirs and Almaden Lake. All three reservoirs drain into the South San Francisco Bay. Mercury-laden sediments and waste material from former mining operations affect Almaden and Guadalupe reservoirs directly, while Calero Reservoir receives mercury atmospherically and through water transfers from Almaden Reservoir via the Almaden–Calero Canal. Almaden Lake is fed by Alamitos Creek, which receives water from Almaden and Calero reservoirs. The Almaden Lake outlet is upstream from Alamitos Creek's confluence with Guadalupe Creek, which receives discharges from Guadalupe Reservoir. Valley Water also manages Stevens Creek Reservoir, which does not have a mining-related source of mercury, but nonetheless is listed as impaired because of elevated mercury in fish (Valley Water 2021). Mercury in the mining district is present primarily as the mineral cinnabar. Mercury in downgradient water and sediment can be present in dissolved or particulate forms. Under certain physical and biological conditions, bacteria can also convert inorganic mercury to the organic form (methylmercury). Methylmercury is of primary concern to human health and the environment because of its greater toxicity and ability to bioaccumulate[2].

[2] Bioaccumulation is a general term for the accumulation of substances, such as pesticides (DDT is an example), methylmercury, or other organic chemicals in an organism or part of an organism. The accumulation process involves the biological sequestering of substances that enter the organism through respiration, food intake, epidermal (skin) contact with the substance, and/or other means. The sequestering results in the organism having a higher concentration of the substance than the concentration in the organism's surrounding environment (USGS 2005).

Figure 3.4-2 Naturally Occurring Asbestos in the Program Area



Source: City of San Jose 2023 (based on data from the SWRCB GeoTracker database)

Factors conducive to mercury conversion to methylmercury (termed methylation) include low-flow or stagnant waters, hypoxic or anoxic conditions in the water column, low pH (less than 6), and high concentrations of dissolved carbon.

The program area encompasses several water bodies that are listed by the California Office of Environmental Health Hazard Assessment (OEHHA) to have fish contaminated with mercury (and other contaminants), and the OEHHA has issued safety restrictions on human consumption of fish from the following water bodies (OEHHA 2017; 2020):

- Guadalupe Reservoir
- Calero Reservoir
- Almaden Reservoir
- Almaden Lake
- Anderson Reservoir
- Calaveras Reservoir
- Chesbro Reservoir
- Stevens Creek Reservoir
- Uvas Reservoir
- Guadalupe River
- Guadalupe Creek
- Alamitos Creek
- Associated percolation ponds along the river and creeks

Previous studies have shown that mercury concentrations in sediments vary widely in different parts of the Guadalupe Watershed. Most mercury in the freshwater environment is chemically bound to suspended particles of soil or sediment; a smaller fraction is bound to dissolved organic carbon. The potential for adverse environmental effects from sediment-bound mercury depends primarily on transport and depositional characteristics (e.g., particle size), and the physical and chemical properties of the sediment. During high flows, large loads of sediment-bound mercury are transported downstream in the creeks and in the Guadalupe River. In some reaches, bank erosion is more severe than scouring of the bed sediments, which significantly increases the total transport of mercury. A small percent of the total mercury load is transported as dissolved mercury or methylmercury, which is more bioavailable (Tetra Tech 2003). In 2008, the RWQCB adopted the Guadalupe River Watershed Mercury TMDL. TMDL implementation was planned for two 10-year phases, with Phase 1 involving mining waste cleanup in upslope locations and pilot tests in reservoirs to reduce methylmercury production. Although the results of Phase 1 have indicated measurable progress in mercury remediation, as demonstrated by indications that fish mercury levels have declined in some reservoirs, this determination has not been evident across all water bodies. Therefore, Phase 1 efforts are anticipated to continue until 2028, and Valley Water will continue pilot tests to reduce bioaccumulation in Calero, Almaden, and Guadalupe reservoirs (Austin 2022).

The San Francisco Bay is listed as impaired by the State (Clean Water Act 303[d]) for mercury, as well as polychlorinated biphenyls (PCBs), and organochlorine pesticides

(dichlorodiphenyltrichloroethane [DDT], chlordane, and dieldrin). After a water body is listed under Section 303(d), the State is required to determine the amount that the contaminants of concern must be reduced to meet the applicable water quality standards and eliminate beneficial use impairment.

Schools

Approximately 100 schools are within 0.25 mile of program pipelines, all in Santa Clara County. The schools in the program area are concentrated in the more densely populated cities in Santa Clara County Although the majority of these schools are in session during a traditional academic calendar, some are open year-round. Table 3.4-1 summarizes the schools within 0.25 mile of program pipelines and their locations are as shown in Figure 3.4-3.

Table 3.4-1 Schools within 0.25 Mile of Program Pipelines

School	City/Jurisdiction	Nearest Pipeline	Approximate Distance from Pipeline (feet)
Canyon Heights Academy	Campbell	Page Distribution System	800
Centro Armonia School	Campbell	Campbell Distributary	680
Old Orchard School And West Valley Christian School Campus	Campbell	Campbell Distributary	510
St Lucy Parish School	Campbell	Central Pipeline	890
Westmont High	Campbell	Stevens Creek Pipeline	870
Abraham Lincoln Elementary	Cupertino	Stevens Creek Pipeline	810
John F. Kennedy Middle	Cupertino	West Pipeline	650
Stevens Creek Elementary School	Cupertino	West Pipeline	1,300
William Regnart Elementary	Cupertino	West Pipeline	230
Gilroy High	Gilroy	South County Recycled Water Pipeline	<10
Las Animas Elementary	Gilroy	South County Recycled Water Pipeline	<10
Solorsano Middle	Gilroy	South County Recycled Water Pipeline	30
Georgina P. Blach Intermediate School	Los Altos	Mountain View Distributary	1,200
St Simon Parish School	Los Altos	West Pipeline	140
Alta Vista Elementary	Los Gatos	Almaden Valley Pipeline	170
Rolling Hills Middle School	Los Gatos	West Pipeline	<10

School	City/Jurisdiction	Nearest Pipeline	Approximate Distance from Pipeline (feet)
Stratford School Los Gatos	Los Gatos	Almaden Valley Pipeline	100
Yavneh Day School	Los Gatos	Almaden Valley Pipeline	740
Stratford School	Milpitas	Milpitas Pipeline	560
Almaden Valley Christian School	Morgan Hill	Santa Clara Conduit	400
Central High (Continuation)	Morgan Hill	Cross Valley Pipeline	800
Live Oak High School	Morgan Hill	Coyote Madrone Half-Road Pipeline	<10
Sobrato High School	Morgan Hill	Cross Valley Pipeline	800
St Francis High School	Mountain View	Mountain View Distributary	450
Adelante Dual Language Academy	San Jose	East Evergreen Pipeline	560
Almaden Country Day School	San Jose	Almaden Valley Pipeline	420
Archbishop Mitty High School	San Jose	Santa Clara Distributary	160
Baker Elementary School	San Jose	Campbell Distributary	200
Beacon School	San Jose	Almaden Valley Pipeline	50
Bellarmine College Preparatory	San Jose	Central Pipeline	<10
Brooktree Elementary	San Jose	Milpitas Pipeline	950
Calero High	San Jose	Snell Pipeline	840
Carlton Elementary	San Jose	Almaden Valley Pipeline	650
Challenger School – Almaden	San Jose	Almaden Valley Pipeline	80
Challenger School – Shawnee	San Jose	Snell Pipeline	650
Chandler Tripp School	San Jose	Central Pipeline	320
Cherrywood Elementary	San Jose	Milpitas Pipeline	1,100
Dartmouth Middle	San Jose	Kooser Percolation Pipeline	440
Downtown College Prep - Alum Rock, Ace Charter High, Independence High, Pegasus High, And Kipp San Jose Collegiate Campus	San Jose	Overfelt Garden Percolation Distribution System	<10

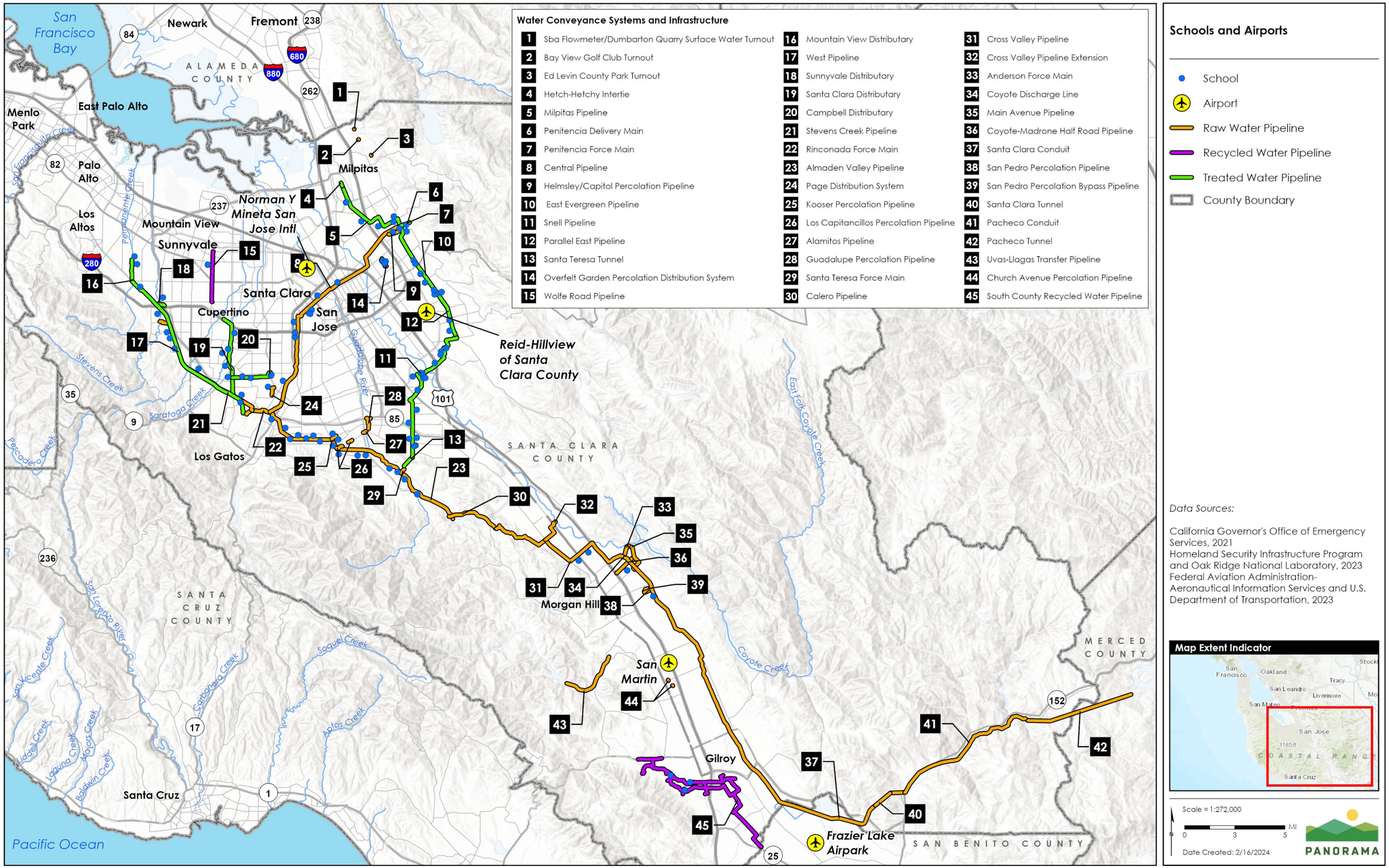
School	City/Jurisdiction	Nearest Pipeline	Approximate Distance from Pipeline (feet)
East Valley Christian School	San Jose	Parallel East Pipeline	60
Escuela Popular/Center For Training And Careers, Family Learning	San Jose	East Evergreen Pipeline	50
Graystone Elementary	San Jose	Almaden Valley Pipeline	210
Guadalupe Elementary School	San Jose	Almaden Valley Pipeline	1,100
Gussie M. Baker Elementary	San Jose	Campbell Distributary	40
Hayes Elementary	San Jose	Snell Pipeline	850
Herbert Hoover Middle	San Jose	Central Pipeline	670
Holly Oak Elementary	San Jose	Parallel East Pipeline	700
Holy Spirit School	San Jose	Almaden Valley Pipeline	1,100
Independence High School	San Jose	Overfelt Garden Percolation System	600
James Lick High	San Jose	East Evergreen Pipeline	50
John J. Montgomery Elementary	San Jose	Snell Pipeline	20
Legacy Christian School	San Jose	Snell Pipeline	900
Leigh High	San Jose	Almaden Valley Pipeline	90
Leland High School	San Jose	Almaden Valley Pipeline	60
Lietz Elementary	San Jose	Kooser Percolation Pipeline	420
Los Alamitos Elementary School	San Jose	Almaden Valley Pipeline	1,200
Los Arboles Literacy And Technology Academy	San Jose	Snell Pipeline	1,000
Lynbrook High School	San Jose	Santa Clara Distributary	1,200
Lyndale Elementary	San Jose	East Evergreen Pipeline	130
Merritt Trace Elementary	San Jose	Central Pipeline	710
Mt. Pleasant High And Kipp Navigate College Prep Campus	San Jose	East Evergreen Pipeline	30
Murdock-Portal Elementary	San Jose	Santa Clara Distributary	90

School	City/Jurisdiction	Nearest Pipeline	Approximate Distance from Pipeline (feet)
Muwekma Ohlone Middle	San Jose	Central Pipeline	20
Noble Elementary	San Jose	Penitencia Force Main	<10
Noddin Elementary	San Jose	Almaden Valley Pipeline	10
Piedmont Hills High School	San Jose	Milpitas Pipeline	740
Piedmont Middle	San Jose	East Evergreen Pipeline	<10
Ramblewood Elementary	San Jose	Snell Pipeline	120
Rocketship Academy Brilliant Minds	San Jose	East Evergreen Pipeline	840
Rocketship Spark Academy and Sylvandale Middle Campus	San Jose	Snell Pipeline	20
Santa Teresa High and Phoenix High Campus	San Jose	Snell Pipeline	<10
Scholars Academy	San Jose	Snell Pipeline	370
Silver Creek High	San Jose	Snell Pipeline	<10
St Martin Of Tours School	San Jose	Central Pipeline	830
St Thomas More School	San Jose	East Evergreen Pipeline	40
St Victor Elementary School	San Jose	Milpitas Pipeline	20
Stratford Middle School	San Jose	Almaden Valley Pipeline	90
Summerdale Elementary	San Jose	Helmsley/Capitol Percolation Pipeline	120
The Harker School - Lower School Campus	San Jose	Campbell Distributary	<10
The Montessori Giving Tree	San Jose	Central Pipeline	520
Toyon Elementary	San Jose	East Evergreen Pipeline	390
Trace Elementary School	San Jose	Central Pipeline	1,100
Union Middle	San Jose	Almaden Valley Pipeline	240
Valley Christian High School And Valley Christian Junior High School Campus	San Jose	Snell Pipeline	10
Voices College-Bound Language Academy And G.W. Hellyer Elementary Campus	San Jose	Snell Pipeline	650

School	City/Jurisdiction	Nearest Pipeline	Approximate Distance from Pipeline (feet)
Action Day Schools - El Quito	Saratoga	Santa Clara Distributary	1,000
Blue Hills Elementary School	Saratoga	Stevens Creek Pipeline	1,200
Prospect High	Saratoga	Santa Clara Distributary	<10
Braly Elementary	Sunnyvale	Wolfe Road Pipeline	940
Cupertino Middle School	Sunnyvale	Sunnyvale Distributary	1,100

Source: California Governor's Office of Emergency Services 2021; Homeland Security Infrastructure Program and Oak Ridge National Laboratory 2023

Figure 3.4-3 Schools and Airports within 0.25 Mile of Program Pipelines



Source: California Governor's Office of Emergency Services 2021; Homeland Security Infrastructure Program and Oak Ridge National Laboratory 2023; Federal Aviation Administration-Aeronautical Information Services and U.S. Department of Transportation 2023

A number of schools are within approximately 200 feet of the program pipelines, including the following:

- Alta Vista Elementary
- Archbishop Mitty High School
- Baker Elementary School
- Beacon School
- Bellarmine College Preparatory
- Challenger School - Almaden
- Chandler Tripp School
- Downtown College Prep - Alum Rock, Ace Charter High, Independence High, Pegasus High, and Kipp San Jose Collegiate Campus
- East Valley Christian School
- Escuela Popular/Center For Training and Careers, Family Learning
- Gilroy High
- Gussie M. Baker Elementary
- James Lick High
- John J. Montgomery Elementary
- Las Animas Elementary
- Leigh High
- Leland High School
- Live Oak High School
- Lyndale Elementary
- Mt. Pleasant High and Kipp Navigate College Prep Campus
- Murdock-Portal Elementary
- Muwekma Ohlone Middle
- Noble Elementary
- Noddin Elementary
- Piedmont Middle
- Prospect High
- Ramblewood Elementary
- Rocketship Spark Academy and Sylvandale Middle Campus
- Rolling Hills Middle School
- Santa Teresa High and Phoenix High Campus
- Silver Creek High
- Sobrato High School
- Solorsano Middle
- St Simon Parish School
- St Thomas More School
- St Victor Elementary School
- Stratford Middle School
- Stratford School Los Gatos
- Summerdale Elementary
- The Harker School - Lower School Campus
- Valley Christian High School and Valley Christian Junior High School Campus

Airports

As shown in Figure 3.4-3, four airports are within 2 miles of program pipelines, including:

- San Jose Mineta International Airport (approximately 0.5 mile from Valley Water's Central Pipeline)
- Reid–Hillview Airport (about 0.8 mile west of Valley Water's Eastern Evergreen Pipeline and Parallel East Pipeline)
- San Martin Airport (about 1.5 miles west of the Santa Clara Conduit near San Martin)
- Frazier Lake Airpark (private airstrip) (about 1 mile south of the Santa Clara Conduit)

Program pipelines are within the airport influence areas[3] of the San Jose Mineta International Airport land use plan and the Reid–Hillview Airport land use plan (Walter B. Windus Airport Land Use Commission 2016; 2016).

San Benito County

The San Benito County Office of Emergency Services (OES) provides emergency management services for the County's Operational Area, including the portion of the program area within northern unincorporated San Benito County. San Benito County OES works in cooperation with other County agencies, including law enforcement, fire, and emergency medical services, as well as utilities (such as Valley Water), to provide a coordinated response to disasters. San Benito County OES is responsible for implementing, reviewing, and updating San Benito County's Emergency Operations Plan, which provides the framework for management of emergencies and disasters in the county and integration and collaboration of services with other County agencies (San Benito County OES 2015).

Although the San Benito County Multi-Jurisdictional Hazard Mitigation Plan does not specifically identify designated evacuation routes for the county, it notes that in the event of an emergency evacuation, most county residents are expected to use SR 25 and SR 198 for emergency egress (San Benito County 2022).

Merced County

The Merced County OES is responsible for ensuring the county is prepared before large-scale emergency disasters and provides coordination and direction during such events. The OES coordinates with partner agencies to implement planning, response, recovery, and mitigation actions resulting from disasters throughout the county, including Pacheco State Park. The Merced County Emergency Operations Plan is the planning document that guides the Merced County's Department of Public Health and other agencies to plan for, respond to, and recover from a natural disaster or human-caused event (Merced County Department of Public Health 2017).

The main access to Pacheco State Park is the entry road, which passes from the park entrance off Dinosaur Point Road and may be used for emergency response access. The Pacheco State Park General Plan also identifies Whiskey Flat Road, which is bisected by the Pacheco Tunnel, as an emergency response access route.

[3] An airport influence area is the area encompassed by the planning boundaries established by the applicable airport land use commission in which current or future airport-related noise, overflight, safety, or airspace protection factors may significant affect land uses or necessitate restrictions on those land uses.

3.4.3 Regulatory Setting

Federal Regulations, Policies, and Standards

Comprehensive Environmental Response, Compensation, and Liability Act
The Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund, was enacted in 1980 (Title 42 USC Sections 9601 et seq.). This statute established authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment.

Community Right-to-Know Act (also known as Title III of the Superfund Amendments and Reauthorization Act)
The Community Right-to-Know Act, commonly known as Title III of the Superfund Amendments and Reauthorization Act, was enacted by Congress in 1986 (Title 42 USC Sections 11001 et seq.). This act was designed to help local communities protect public health, safety, and the environment from chemical hazards. This act imposes requirements so that hazardous materials are handled, used, stored, and disposed appropriately, and to prevent or mitigate injury to human health or the environment in the event that such materials are released accidentally.

Resource Conservation and Recovery Act
RCRA was enacted in 1976 (Title 42 USC Sections 6901 et seq.). Under the RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave." Cradle-to-grave is used by USEPA in this context to mean that USEPA regulates hazardous waste from its generation to disposal (US EPA 2023).

Hazardous and Solid Waste Amendments
The Hazardous and Solid Waste Amendments are the 1984 amendments to the RCRA. These amendments affirm and extend the "cradle to grave" system of regulating hazardous wastes, focusing on waste minimization and phasing out land disposal of hazardous waste as well as requiring corrective action for releases. The amendments specifically prohibit the use of certain techniques for disposal of some hazardous wastes.

Hazardous Materials Transportation Act
Under Title 49 of the CFR, the U.S. Department of Transportation (USDOT) has the regulatory responsibility for the safe transportation of hazardous materials. The Hazardous Materials Transportation Act provides for the protection of life, property, and the environment from the inherent risks of transporting hazardous materials in all major modes of commerce. Specifically, USDOT developed hazardous materials regulations that govern the classification, packaging, communication, transportation, and handling of hazardous materials as well as the requirements for employee training and incident reporting (49 CFR Parts 171–180). The transportation of hazardous materials is subject to both RCRA and USDOT regulations. The State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway

Patrol, California Department of Transportation, and DTSC. Together, these agencies determine the container types to be used and license hazardous-waste haulers for transportation of hazardous waste on public roads. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take the appropriate, immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill) and is responsible for the discharge cleanup.

Occupational Safety and Health Act

The Occupational Safety and Health Act was enacted in 1970 (Title 29 USC Sections 651 et seq.). The goal of the act is to make sure that employers provide their workers with a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. OSHA administers the act and sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries.

The General Duty Clause requires employers to keep the workplace free of serious recognized hazards. OSHA's Hazard Communication Regulation (29 CFR Section 1910.1200) requires that workers be trained and notified of specific hazards associated with hazardous workplace substances. Employees or contractors who would handle or work with hazardous materials (e.g., asbestos, fuel) in a program area would be subject to these requirements.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) was enacted in 1976 (Title 15 USC Sections 2601 et seq.). The act addresses production, importation, use, and disposal of specific chemicals, including PCBs, asbestos, radon, and lead-based paint. The TSCA also provides USEPA with the authority to require reporting, record-keeping, and testing, and states restrictions related to chemical substances and/or mixtures.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was enacted in 1996 (Title 7 USC Sections 136 et seq.). FIRFRA is the federal statute that governs the registration sale, distribution, and use of herbicides in the U.S. FIFRA authorizes the USEPA to review and register herbicides for specified uses. Before USEPA may register an herbicide under FIFRA, USEPA must determine that the pesticide "will not generally cause unreasonable adverse effects on the environment". USEPA also has the authority to suspend or cancel the registration of a pesticide if subsequent information shows that continued use would pose unreasonable risks.

FIFRA was amended by the Federal Environmental Pesticide Control Act in 1972 and the Pesticide Registration Improvement Act of 2003. These amendments strengthened the enforcement provisions of FIFRA, broadened the legal emphasis on protecting health and the environment, regulated the use of herbicides, extended the scope of federal law to cover intrastate registrations, and streamlined the administrative appeals process. Herbicides used as

a part of the updated PMP would need to be approved by USEPA and comply with the requirements of FIFRA (USEPA 2023).

Agricultural Worker Protection Standards
The USEPA protects agricultural workers and herbicide handlers from occupational exposure to pesticides through the Worker Protection Standards (WPS). Facilities and institutions that handle pesticides must adopt workplace practices that are designed to reduce or eliminate exposure to pesticides and establish procedures for responding to exposure-related emergencies. FIFRA prohibits the use of pesticides that generally pose unreasonable risks to people, including agricultural workers, or to the environment (USEPA 2023).

USEPA uses the following primary resources to protect agricultural workers:

- Pesticide-specific restrictions and label requirements
- Broadly applicable WPS

If USEPA believes the risks to workers posed by a pesticide are excessive, it can take actions such as requiring additional label warnings or requiring labeling that mandates use of protective clothing. The WPS specifically address how to reduce the risk of illness or injury resulting from occupational exposures to herbicides used in the production of agricultural plants on farms, in nurseries, in greenhouses, and in forests, and from the accidental exposure of workers and other persons to such herbicides. The standards establish ventilation criteria, entry restrictions, personal protective equipment guidelines, and information display requirements (USEPA 2023).

EPA-Stipulated Injunction Regarding Pesticides and the California Red-Legged Frog
A Stipulated Injunction was issued on October 20, 2006, regarding a lawsuit brought against USEPA by the Center for Biological Diversity. The injunction required USEPA to determine the effects of 66 pesticides on the California red-legged frog within certain areas of California under a Court-ordered schedule of 3 years. See Section 3.3, Biological Resources, for more details on the Endangered Species Act and how this injunction impacts the use of herbicides as part of the updated PMP.

State Regulations, Policies, and Standards

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, State laws align or overlap with federal laws, and enforcement of these laws is the responsibility of the State or local agency to which enforcement powers are delegated. The primary California agencies with responsibility for management of hazardous materials include DTSC and the San Francisco Bay RWQCB (both under the umbrella of the California Environmental Protection Agency [CalEPA]), Cal/OSHA, California Department of Health Services, California Highway Patrol, and California Department of Transportation.

Regional and Environmental Screening Levels
USEPA Regional Screening Levels and San Francisco Bay RWQCB Environmental Screening Levels (ESLs) are the guidelines used to evaluate the potential risk associated with chemicals in

soil or groundwater where a release of hazardous materials has occurred. Although developed and maintained by the RWQCB, ESLs are used by regulatory agencies throughout the state. Screening levels have been established for both residential and commercial/industrial land uses, and for construction workers. Residential screening levels are the most restrictive. Soils with chemical concentrations below these ESLs generally do not require remediation and are suitable for unrestricted uses if disposed off-site.

Commercial/industrial screening levels are generally less restrictive than residential screening levels because they are based on potential worker exposure to hazardous materials in the soil (and these are generally less than residential exposures). Screening levels for construction workers are also less restrictive than for commercial/industrial workers because construction workers are exposed to a chemical of concern only during the duration of construction, while industrial workers are assumed to be exposed over a working lifetime. Chemical concentrations below these screening levels generally do not require remediation and are suitable for unrestricted uses. In addition, other more specific but similar screening levels are used for more narrowly focused human health or ecological risk assessment considerations.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
In 1996, CalEPA adopted regulations that implemented the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program; Health and Safety Code Sections 25404 et seq.) at the local level. The program protects Californians from hazardous waste and hazardous materials by ensuring that local regulatory agencies consistently apply statewide standards when they issue permits, conduct inspections, and engage in enforcement activities. The Unified Program is a consolidation of multiple environmental and emergency management programs. The agency responsible for implementation of the Unified Program is called the Certified Unified Program Agency (CUPA), which for the program is the Hazardous Materials Compliance Division (HMCD) of Santa Clara County. The following programs are consolidated under the Unified Program (Santa Clara County, n.d.):

- Hazardous Waste Generator Program
- Tiered Permitting Program
- Hazardous Materials Business Plan (HMBP)
- Aboveground Storage Tank Program (APSA)
- Underground Storage Tank (UST) Program
- California Accidental Release Program (CalARP)

The HMCD has been certified by the State to be the CUPA to administer these six programs throughout Santa Clara County, including incorporated cities except for those that administer their own CUPAs, which include the cities of Santa Clara (Community Risk Reduction Division), Gilroy (Chemical Control Program), and Sunnyvale (Department of Public Safety). In addition, the San Benito County Health Department is the state certified CUPA for San Benito County, and the Merced County Department of Public Health, Division of Environmental

Health is the Merced County CUPA responsible for administering the six State-mandated programs.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

In 2001, CARB approved the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (Title 17 CCR Section 93105). This ATCM requires implementation of best available dust mitigation measures during ground-disturbing activities (including the road maintenance, construction, and grading activities proposed as part of the program) in areas where NOA is likely to be found. Such 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 BAAQMD or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or NOA on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

As required by the ATCM, road construction and maintenance operations must use dust control measures for a specified set of emission sources and prevent visible emissions crossing the project boundaries. The BAAQMD must also be notified before any work begins.

California Hazardous Waste and Substances List (Cortese List)

The Hazardous Waste and Substances Sites List (also known as the Cortese List) is a planning document used by the State, local agencies, and developers to comply with CEQA requirements by providing information about the location of hazardous materials release sites. Section 65962.5 of the California Government Code requires CalEPA to develop an updated Cortese List at least annually. The oversight of hazardous materials sites often involves several different agencies that may have overlapping authority and jurisdiction. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. For the on-site hazardous materials cases and issues, the San Francisco Bay RWQCB would be the lead agency. Other cases may be overseen by DTSC, county health services, or other agencies.

California Hazardous Materials Release Response Plan and Inventory Law

The California Hazardous Materials Release Response Plan and Inventory Law (Business Plan Act), enacted in 1985, requires businesses that store hazardous materials on site to prepare a Hazardous Materials Business Plan and submit it to the local CUPA. For the updated PMP, this would be the Santa Clara County HMCD, City of Santa Clara Community Risk Reduction Division, City of Gilroy Chemical Control Program, and the City of Sunnyvale DPS.

California Hazardous Waste Control Act

Under the California Hazardous Waste Control Act, in Division 20, Chapter 6.5, Article 2, Section 25100, et seq. of the California Health and Safety Code, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The hazardous waste regulations establish criteria for identifying, packaging, and labeling

hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed in landfills. DTSC also is the administering agency for the California Hazardous Substance Account Act, under Division 20, Chapter 6.8, Sections 25300 et seq. of the California Health and Safety Code, also known as the State Superfund law, providing for the investigation and remediation of hazardous substances pursuant to State law.

California Food and Agricultural Code

Division 7, Chapter 2 of the California Food and Agriculture Code (FAC) encompasses the policies and regulations that govern pesticide use in California. Section 12981 covers actions related to pesticide application, from the restriction of worker re-entry into pesticide treated areas to the registration of pesticide use. Pursuant to Section 12972, the pesticides are required to be used in a manner that prevents substantial drift into non-target areas. This provision highlights one of the main concerns of pesticide regulation, which is runoff or discharge into the surrounding groundwater resources or sensitive habitats. If pesticides are to be applied on public property, such as school grounds, parks, or other areas where public exposure is foreseeable, then the proper signs and warnings must be posted in the affected areas, pursuant to Section 12978. Herbicide use is also regulated under Division 7, Chapter 3, Article 2 of the California FAC, including prohibited use of herbicides that are harmful to any crop.

Furthermore, the Pesticide Contamination Prevention Act, under Division 7, Chapter 2, Article 15 of the California FAC, provides further guidance and regulations regarding pesticide use in the state. Key elements of the act include pesticide pollution into groundwater aquifers as well as run-off into local areas. The act declares that the potential of pollution from pesticides must be considered in the registration, renewal, and re-registration process because of the pervasive effects of pesticides on public health.

California Fire Code

The California Fire Code regulates the storage and handling of hazardous materials, including the requirement for secondary containment, separation of incompatible materials, and preparation of spill response procedures.

California Code of Regulations, Titles 13, 22, and 26

These regulations govern the transportation of hazardous waste originating in and passing through the state, including the requirements for shipping, containers, and labeling.

Cal/OSHA Regulations, Title 8 of the Code of Regulations

Cal/OSHA regulations under Title 8 of the CCR concern the use of hazardous materials in the workplace and require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA has primary responsibility for developing and enforcing workplace safety regulations in California. Because the State has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found

under Title 29 of the CFR. Cal/OSHA standards generally are more stringent than the federal regulations.

California Code of Regulations, Section 4216–4216.9
Section 4216–4216.9 of the CCR, "Protection of Underground Infrastructure," requires an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least 2 days before excavation of any subsurface installations, so that any existing underground utilities are properly marked before the start of activities in a project area.

California Emergency Services Act
Under the Emergency Services Act (Title 2 California Government Code Chapter 7), the State has 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 OES. This office coordinates the responses of other agencies, including EPA, the California Highway Patrol, the nine RWQCBs, various air quality management districts, and county disaster response offices.

California Public Resources Code, Section 21151.4
California Public Resources Code (PRC), Section 21151.4, requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of a project about potential impacts on the school if the project may reasonably be anticipated to emit hazardous air emissions or involve the handling of an extremely hazardous substance or a mixture containing an extremely hazardous substance. Herbicide application may occur near schools as a part of the updated PMP, and Valley Water would be required to comply with Section 21151.4 of the PRC and consult with applicable school districts.

Pacheco State Park General Plan
The California State Park and Recreation Commission approved the Pacheco State Park General Plan in 2006, to provide guidelines for protecting park resources (California State Parks 2006a). The following goals from the Pacheco State Park General Plan are related to hazards and hazardous materials (California State Parks 2006b):

Goal OPS-A1	Ensure safe and well-signed ingress and egress to SR 152.
Goal OPS-A2	Provide for intermodal emergency access to key areas of the Park as necessary.
Goal REG-LI	Identify and cooperate with all adjacent landowners, site tenants (ITR, "right of way" users), and local and State agencies to share resources and ensure coordinated implementation of Park management actions.

Local Regulations, Policies, and Standards

Santa Clara Valley Water District Local Hazard Mitigation Plan

Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented. Valley Water is one of the three special districts, in addition to the fourteen local jurisdictions (planning partners) within the Santa Clara County Operational Area of Santa Clara County, participating in the Multijurisdictional Hazard Mitigation Plan prepared by the Santa Clara County OEM.

Valley Water is in the process of updating its 2017 LHMP and received approval of the plan from the FEMA. FEMA approval for the current LHMP was for a 5-year period, from May 2, 2018, to May 2, 2023. The goal of the 2017 LHMP is to maintain and enhance a disaster-resistant region by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters. The specific goals of the 2017 LHMP include (Valley Water 2017):

- Protecting life and safety
- Continuing coordination with key stakeholders and other agencies
- Maintaining a flexible and engaging public outreach campaign
- Fostering better communication and coordination within Valley Water's jurisdiction and in surrounding communities
- Reducing risk of loss and damage from hazard events
- Addressing aging infrastructure issues to reduce/minimize future hazards and disasters

Bay Area Air Quality Management District, Regulation 11, Rule 2

The BAAQMD Regulation 11, Rule 2 provides stipulations for activities involving handling, transportation, and disposal of asbestos-containing material. Specific disposal methods for asbestos-containing material are required under Rule 2. All asbestos-containing waste from program excavation would be required to be disposed at waste disposal sites that are operated in accordance with this BAAQMD regulation. All vehicles transporting asbestos-containing waste material are required to be marked during loading and unloading of waste. The signs are to be visible and be displayed in such a manner that a person can easily read the legend.

Santa Clara County

Santa Clara County General Plan

Adopted in 1994, the Santa Clara County General Plan provides strategies, policies, and implementation recommendations to guide evaluation of the natural and built environment for potential hazards and, to the extent possible, assess and describe the risk factors of the most threatening of those hazards. As a State of California Special District, Valley Water is responsible for implementing several of these policies in the county. In the Health and Safety Chapter of the General Plan, the following Hazards and Hazardous Materials policies pertain to

hazards, hazardous materials, emergency plans, procedures and response, as well as the operational safety of aircrafts (Santa Clara County 1994):

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.
C-HS 17	Local governments should comply with all federal and state regulations regarding emergency planning and preparedness.
C-HS 18	Local government, business, and community organizations should cooperate in preparing the most effective emergency response plans and procedures feasible.
C-HS(i) 14	Develop, adopt, and maintain all federal and state mandated emergency plans and procedures. (Implementors: County, cities and special districts)
C-HS(i) 16	Ensure that critical emergency services normally provided by an outside agency will be available in each jurisdiction as needed (i.e., public health, mental health, coroner). (Implementors: County, cities and special districts)
C-HS(i) 19	Work with local businesses and farmers to ensure that the appropriate emergency response procedures are understood and that emergency equipment is available. (Implementors: County, cities and special districts)
C-HS 23	Local governments and hazardous materials users should work jointly to identify the most effective and economically feasible measures to prevent hazardous materials incidents and ensure the swift post-incident recovery of all effected.
C-HS(i) 20	Develop recovery procedures to ensure continuity of government and swift restoration of public services, including: a. duplication and safe storage of critical public maps and other records; b. development of alternative agency procedures which expedite public services; and c. establishment of agreements between private and public agencies to maximize service delivery resources to the community. (Implementors: County, cities, special districts, community service and business organizations)
C-HS 39	Land uses, structures, and objects which could distract, confuse, or otherwise contribute to pilot error should not be allowed within the vicinity of airport operations.

General Plans of Incorporated Cities within Santa Clara County

Of these local municipalities, the following have general plans that contain policies and planning strategies related to hazards and hazards materials:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The hazards and hazardous materials policies and guidelines in these general plans commonly ensure compliance with all federal and State-mandated hazardous materials planning and regulatory measures, as well as all federal and State regulations regarding emergency planning and preparedness.

Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan

The current Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) was approved by FEMA in 2017. Mitigation plans have a 5-year life-cycle, and thus the MJHMP expired in 2022, and the next 5-year plan is in development with participation from Valley Water, County Departments, the Santa Clara County Fire Department, and the following cities and towns:

- City of Campbell
- City of Cupertino
- City of Gilroy
- City of Los Altos
- City of Milpitas
- City of Mountain View
- City of Morgan Hill
- City of Palo Alto
- City of San Jose
- City of Santa Clara
- City of Saratoga
- City of Sunnyvale
- County of Santa Clara
- Town of Los Altos Hills
- Town of Los Gatos

San Benito County

San Benito County General Plan

Policies related to hazards and hazardous materials in the San Benito County General Plan include the following (San Benito County 2015):

HS-6.1 **Hazardous Materials Storage and Disposal.** The County shall require proper storage and disposal of hazardous materials 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.

HS-6.4 **Hazardous Materials Incident Response Area Plan.** The County shall restrict transport of hazardous materials within San Benito County to designated routes.

HS-6.5 **Transportation Routes.** The County shall restrict transport of hazardous materials within San Benito County to designated routes.

San Benito County Multi-Jurisdictional Hazard Mitigation Plan

In 2021, San Benito County updated its MJHMP to incorporate lessons learned from recent wildfires, drought, intermittent flood events, and the pandemic. The plan does not have the authority to establish policy but instead, through its planning process, allows the County to develop mitigation actions to increase resiliency to hazardous events. This plan applies to all communities in San Benito County, including incorporated cities, local water districts serving the county (not including Valley Water), and unincorporated portions of the county (San Benito County 2022).

Merced County

Merced County General Plan

The Merced County General Plan is adopted by the Board of Supervisors and serves as the overarching policy document that guides public safety, and other policy decisions in the unincorporated county. The Transportation and Circulation Element of the General Plan includes policies related to hazardous materials and waste focus on requiring that hazardous materials are used, stored, transported, and disposed of in a safe manner in compliance with applicable safety standards (Merced County 2013).

3.4.4 Impact Assessment Methodology

The impacts of program implementation were evaluated qualitatively, based on the potential for program activities to create a significant hazard to the public or environment during implementation. As detailed in Chapter 2, Project Description, similar to the existing PMP, the scope of the updated PMP is limited to inspection and maintenance of Valley Water's existing water conveyance systems and facilities, and no new or expanded infrastructure would be constructed or operated under the updated PMP. Thus, the potential to create significant hazards to the public or environment were assessed based on changes from baseline conditions.

Significance Criteria

The impacts of the program on hazards and hazards materials would be considered significant if they exceed the following standards of significance:

- **Impact HAZ-1:** Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

- **Impact HAZ-2:** Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- **Impact HAZ-3:** Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.
- **Impact HAZ-4:** Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- **Impact HAZ-5:** For program pipelines located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would result in a safety hazard or excessive noise for people residing or working in the program area.
- **Impact HAZ-6:** Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- **Impact HAZ-7:** Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. These BMP conditions are included as part of the program, and the impact analyses were conducted assuming application of these practices and conditions. The following hazards and hazardous materials-related BMPs from Valley Water's Best Management Practices Handbook are applicable to the program:

- **BMP HM-5:** Comply with Restrictions on Herbicide Use in Upland Areas
- **BMP HM-6:** Comply with Restrictions on Herbicide Use in Aquatic Areas
- **BMP HM-8:** Ensure Proper Vehicle and Equipment Fueling and Maintenance
- **BMP HM-9:** Ensure Proper Hazardous Materials Management
- **BMP HM-10:** Utilize Spill Prevention Measures
- **BMP HM-11:** Ensure Worker Safety in Areas with High Mercury Levels
- **BMP HM-12:** Incorporate Fire Prevention Measures
- **BMP WQ-4:** Limit Impacts from Staging and Stockpiling Materials

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the program to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to hazards and hazardous materials are provided in Table 3.4-2.

Table 3.4-2 Hazards- and Hazardous Materials-Related AMMs

AMM No.	AMM Requirements
AMM HAZ-1	**Aquatic Protection from Hazardous Wastes.** Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that may be hazardous to aquatic life will be prevented from contaminating the soil and/or entering waters of the State. Any of these materials, placed within or where they may enter a stream or lake, will be removed immediately.
AMM HAZ-2	**Secondary Containment and Storage.** All chemicals that are stored in staging areas will be stored in secondary containment capable of containing 110 percent of the primary container. Proper storage and security will be implemented so that chemicals are not spilled or vandalized during non-working hours.
AMM HAZ-3	**Equipment and Fluid Storage.** Valley Water will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels. All equipment will be stored in a secure area, away from any channel. Between October 15 and April 15 (and depending on rain patterns, possibly before and after these dates as well), all equipment fluid storage areas will be provided with an impermeable cover, to prevent contact with stormwater.
AMM HAZ-4	**Hazardous Materials Transport Requirements.** Drivers transporting sodium bisulfite, sodium hypochlorite, or any other hazardous material will have a commercial driver's license with a HAZMAT endorsement.
AMM HAZ-5	**Worker Wash Stations.** Valley Water will provide one portable toilet and one wash station per 20 workers or a fraction thereof for any program work sites that do not have mobile access to a nearby facility. Wash stations will also be required on site for any job where hazardous materials are handled (e.g., where repair work is conducted), or where pipeline draining will involve using a dechlorination chemical.
AMM HAZ-6	**Avoid Exposing Soils with High Mercury Levels.** Bank stabilization projects in portions of the Guadalupe River watershed affected by historic mercury mining may expose soils containing mercury. 1. In Basin Plan identified creeks in the Guadalupe River Basin, soils that are likely to be disturbed or excavated shall be tested for mercury (Hg). Soils shall be remediated if disturbed or excavated soils exposed to streamflow have a residual sample test exceeding 0.2 mg mercury per kg erodible sediment (dry wt., median). 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. **2.** Soils with residual sample mercury concentrations exceeding 0.2 mg mercury per kg erodible sediment (dry wt., median) shall be removed and disposed of in a Class I landfill following established work practices and hazard control measures. Soils with residual sample mercury concentrations less than 0.2 mg mercury per kg erodible sediment (dry wt., median) will remain at the project site.
AMM HAZ-7	**Existing Hazardous Sites.** For program activities involving ground disturbance (e.g., excavation, grading), Valley Water will conduct a search of the Hazardous Waste and

AMM No.	AMM Requirements
	Substances Site List/Cortese List for existing known contaminated sites listed on the State Water Resource Control Board's GeoTracker database and the Department of Toxic Substances Control (DTSC) EnviroStor database in the vicinity of the proposed work site. If any ground-disturbing activities are proposed within 1,500 feet of any "open" sites where contamination has not been remediated, Valley Water will contact the case manager listed in the database. Valley Water will work with the case manager to ensure program activities would not affect cleanup or monitoring activities or threaten the public or environment.
AMM AIR-1	Program activities will be conducted in accordance with current BAAQMD guidance regarding construction-related fugitive dust emissions. The following measures comprise construction BMPs from the 2022 BAAQMD CEQA Air Quality Guidelines: 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 will be prohibited. 4. All vehicle speeds on unpaved roads will be limited to 15 miles per hour. 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. All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph. 7. All trucks and equipment, including their tires, will be washed off prior to leaving the site. **8.** Unpaved roads providing access to sites located 100 feet or further from a paved road will be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. **9.** Publicly visible signs will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number will also be visible to ensure compliance with applicable regulations.
AMM TRA-1	**Traffic Control Plan.** For program activities requiring encroachment into a city, county, or State-owned road, Valley Water or its contractor shall prepare a Traffic Control Plan (TCP). The TCP shall be prepared by a California-licensed Traffic Engineer or licensed civil professional engineer and conform to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and the Manual on Uniform Traffic Control Devices. At a minimum, the TCP shall include the following elements: • Circulation and detour plans to minimize impacts on local street circulation (haul routes will minimize truck traffic on local roadways to the extent possible). • A description of emergency response vehicle access (an alternate route shall be identified if the road or area is completely blocked, preventing access by an emergency responder).

AMM No.	AMM Requirements
	• Procedures to schedule construction activities in a manner that will minimize overlapping construction phases that require truck hauling to the extent feasible. • Identification of staging areas that will be designated for storage of all equipment and materials in a manner that minimizes obstruction to traffic. • Identification of designated construction worker parking locations. • Procedures for use of temporary signs, flashing lights, barricades, flaggers, and other traffic safety personnel or devices where required to control or direct the flow of traffic. • Temporary traffic marking installation requirements where required to direct the flow of traffic (traffic markings will be maintained for the duration of road/lane closure and removed when completed). • Procedures to keep sidewalks and bicycle lanes open for pedestrians and cyclists, respectively, to the extent safe, or identification of detour routes and signing if sidewalks or bicycle lanes will be closed. • Procedures to maintain driveway access to residences or businesses unless other arrangements are made. A minimum of 12-foot-wide travel lanes will be maintained unless otherwise approved by Valley Water and/or an agency with encroachment jurisdiction. Valley Water or its contractors will submit the TCP to the agency with encroachment jurisdiction in advance of program activities, to provide the agency with the opportunity to review the TCP and provide additional or alternative recommendations as appropriate. The contractor must submit documentation to Valley Water that the plan has been approved by the appropriate jurisdictional agency prior to the commencement of construction.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement Santa Clara Valley Habitat Plan (VHP) conditions as part of the program. Therefore, the impact analyses were conducted assuming application of these VHP conditions in VHP-covered program areas. The VHP conditions applicable to hazards and hazardous materials are provided in Table 3.4-3.

Table 3.4-3 VHP Conditions Applicable to Hazards and Hazardous Materials

Condition No.	VHP Condition
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality
Condition 4	Avoidance and Minimization for In-Stream Projects
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance

Note: VHP Conditions 3, 4, and 5 require compliance with a suite of avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided Table 2.7-4 in Chapter 2.

3.4.5 Impact Analysis

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (less than significant)

As discussed in Chapter 2, program activities would be performed by implementing various common tasks. The tasks requiring the use of construction vehicles and equipment that would

use limited amounts of potentially hazardous materials (e.g., fuels, oils, lubricants) to operate or require the use of hazardous materials (herbicides) to implement the task would include:

- Setup, staging, and access
- Excavation, construction, and other ground disturbance
- Repair of pipeline system infrastructure
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Bank stabilization, erosion control, and energy dissipation device maintenance
- Vegetation management

Water quality impacts associated with the use of hazardous materials during pump-out, dewatering, and refilling are discussed in Section 3.1, Hydrology and Water Quality. Therefore, the analysis below focuses on hazardous material transport, use, and disposal associated with all other tasks listed above, and is grouped where certain tasks would result in similar impacts.

Setup, Staging, and Access; Excavation and Construction; Repair; and Bank Stabilization
Implementation of these tasks would involve the routine transport of materials and equipment to a program work site; the setup, use, and storage of those materials and equipment on site; and disposal of hazardous materials. Highways, city streets, and residential roadways would be used to travel to and from program work sites, as well as used for hauling material for disposal from program work sites. Relevant hazardous materials would include chemicals, fuel, and lubricants that would be required for operation of construction equipment and vehicles; herbicides for vegetation management, and small quantities of potentially hazardous materials such as high concentration of sodium hypochlorite (used for pipeline disinfection), and pesticides (the use of which is described further below) required to complete maintenance activities. Activities such as transporting and staging equipment, stockpiling materials and sediment, storing hazardous materials, and disposing material could expose people and the surrounding environment to hazardous materials if not transported, stored, used, otherwise handled, or disposed appropriately.

During the program, Valley Water would implement its standard BMPs. A suite of BMPs would apply to the program and would ensure proper handling of hazardous materials during transport, use, and disposal. These BMPs would require proper handling of hazardous materials. BMP HM-8 outlines the required procedures for hazardous materials associated with equipment and vehicle operation and maintenance. BMP HM-9, BMP HM-10, and BMP HM-11 would require worker training on hazardous waste handling and spill response. BMP HM-9 also outlines the required procedures for proper secondary containment for chemical storage. BMP HM-10 and compliance with required VHP conditions (in VHP-covered program areas) requires that spill prevention kits are in close proximity when using any hazardous materials and that field personnel are appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills. BMP WQ-4 would require implementation of controls to prevent runoff of hazardous materials from staging and stockpile areas.

As described in Chapter 2, Project Description, Valley Water also would implement a number of program-specific AMMs as part of the program to more adequately address impacts related to PMP tasks. AMM HAZ-1 protects aquatic resources from hazardous waste. Furthermore, with implementation of AMMs HAZ-2 and HAZ-3, all construction-related debris or waste material, stored chemicals, and excavated spoils would be prevented from contaminating soil or water by properly securing the debris and storing it away from water channels, as well as by ensuring that debris or waste quantities greater than 55 gallons and any quantity of chemicals would have a secondary containment and be protected from stormwater. AMM HAZ-4 specifies requirements for the transport of hazardous materials. For the protection of workers on site, AMM HAZ-5 would ensure worker safety, by requiring wash stations on site for any job where hazardous materials would be handled or where pipeline draining would involve using dichlorination chemicals. Because these BMPs, program-specific AMMs, and VHP conditions would be implemented as part of program, and because all program activities would be conducted in compliance with all federal and State regulations for the routine transport of materials and equipment to a program work site; for setup, use, and storage of those materials and equipment on site; and for disposal of hazardous materials, the program activities would not create a significant hazard to the public or the environment. The impact would be **less than significant**.

Vegetation Management

Vegetation management activities associated with the program would involve the use of pesticides or herbicides, including cut stump herbicide treatment and pre- and post-emergent weed herbicide application. The use of herbicides could expose applicators and workers to hazards as well as indirectly affect the public, such as nearby residents, recreationalists, passersby on roadways, or individuals with whom applicators share households. Some of the herbicides would have the potential for significant human toxicity or may have deleterious effects on the surrounding environment if not handled properly.

The updated PMP would include vegetation management, which is not a covered activity under the existing PMP. However, herbicides are currently used by Valley Water for vegetation management throughout the program area under other facility and infrastructure management programs. As a standard procedure, Valley Water retains a dedicated staff, known as the Pest Control Advisor (PCA), who is responsible for coordinating, reviewing, tracking, documenting, and reporting pest control practices across all Valley Water programs. Furthermore, Valley Water implements district-wide policies for pesticide use (Q751D02: Control and Oversight of Pesticide Use), which would also be implemented for the updated PMP. These policies would include the following standard practices:

- Minimizing the environmental risk and exposure resulting from its pesticide use by evaluating and employing alternatives to the maximum extent practicable.
- Allowing use of pesticides only after an assessment has been made by the PCA regarding environmental, financial, and public health aspects of each of the alternatives.

- Restricting pesticide applicators only to staff who are State-certified applicators or are under the direct supervision of a State-certified applicator.
- Posting notifications in public use areas where pesticides would be used, including sign postings notifying staff and the public of the date and time of planned applications, the pesticide products' active ingredients, time of allowable re-entry into the treated area, and a Valley Water staff contact phone number to accommodate public inquiries.
- Complying with all pesticide application restrictions and policies, including the California FAC.

In accordance with the provisions of Valley Water's guidance on pesticide use (Q751D02: Control and Oversight of Pesticide Use), Valley Water implements standard BMPs to avoid impacts associated with herbicide use. Namely, BMP HM-5 restricts herbicide use in upland areas within specified timeframes prior to predicted rainfall, and BMP HM-6 restricts herbicide use in aquatic areas. BMP HM-6 requires that only herbicides registered for aquatic use can be used within the banks of channels within 20 feet of any water present, and also restricts herbicide use to the dry season. These BMPs would ensure that herbicides are used appropriately.

Furthermore, as discussed in Section 3.4.3, EPA would oversee herbicide use and health and safety through the WPS. The WPS contain requirements to minimize risks to herbicide applicators, including use of personal protective equipment, restricted entry intervals after herbicide application, decontamination supplies, and emergency medical assistance. Compliance with the WPS as well as with OSHA and Cal/OSHA regulations would minimize risk to workers and the public. Because Valley Water would implement its standard policies related to pesticide/herbicide application as part of the program and all program activities would be conducted in compliance with all federal and State regulations, the transport, storage, and use of pesticides or herbicides would not create a significant hazard to the public or the environment. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HAZ-1.

Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (less than significant)

Impacts related to accidental leaks or spills of hazardous materials that would be used during program implementation is discussed under Impact HAZ-1, and water quality impacts related to release of hazardous materials are discussed in Section 3.1, Hydrology and Water Quality. Therefore, this analysis focuses on the potential for program implementation to result in accidental release of hazardous materials from encountering hazardous materials during

program activities. Of the common program tasks, the following could involve hazardous materials, specifically sediment-bound mercury and NOA:

- Excavation, construction, and other ground disturbance
- Bank stabilization, erosion control, and energy dissipation device maintenance

The analysis groups discussions of these tasks where they would result in similar impacts.

Excavation and Other Ground Disturbance

Naturally Occurring Asbestos

As shown in Figure 3.4-2, program pipelines traverse or are adjacent to areas with substrate containing NOA, particularly areas in the central and southern portions of Santa Clara Valley. Small segments of four program pipelines bisect or are immediately adjacent to areas containing NOA—the Snell pipeline, the Santa Teresa tunnel, Santa Teresa force main, and the Cross Valley pipeline. Access roads used for ingress and egress to program work sites also may cross areas of NOA. Program-related ground disturbance (e.g., excavation for pipeline repair, grading for access road maintenance in these areas) could create health risks. As discussed in Section 3.8, Air Quality, any ground disturbance (e.g., excavation, grading) in the areas with NOA could cause the asbestos fibers to become airborne, which could pose significant health risks to workers and nearby individuals if inhaled.

When working in areas known to have NOA, Valley Water would comply with applicable federal, State, and local regulations, including CARB's ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. For construction and grading projects that would disturb 1 acre or less, the ATCM requires several specific actions to minimize emissions of dust, such as vehicle speed limitations, application of water before and during the ground disturbance, keeping storage piles wet or covered, and track-out prevention and removal. Construction projects that would disturb more than 1 acre must prepare and obtain the BAAQMD's approval of an asbestos dust mitigation plan. The plan must specify how the operation would minimize emissions and must address specific emission sources. This ATCM also stipulates that activities must not result in visible emissions crossing the property line, regardless of the size of the disturbance.

Furthermore, compliance with BAAQMD Regulation 11, Rule 2 would require Valley Water and its contractors to implement specific disposal methods for asbestos-containing material. Valley Water also would implement AMM AIR-1, which would require implementation of dust control measures in compliance with current BAAQMD guidance. Implementation of AMM AIR-1 would reduce dust (including airborne asbestos) at program work sites and during sediment transport. Compliance with applicable regulations and implementation of AMM AIR-1 would reduce the program's potential to expose sensitive receptors to airborne asbestos. Therefore, program implementation would not create a significant hazard to the public or the environment from asbestos emissions. The impact would be **less than significant**.

Excavation, Construction, and Other Ground Disturbance; Bank Stabilization, Erosion Control, and Energy Dissipation Device Maintenance

Mercury and Other Constituents

As previously discussed, the State lists the San Francisco Bay as impaired for PCBs, organochlorine pesticides (i.e., DDT, chlordane, and dieldrin), and mercury, and sediments within the Guadalupe River Watershed are potentially contaminated with these constituents. Program excavation and bank stabilization activities near or within water bodies, watercourses, or stream banks could expose workers to these constituents.

Consistent with the existing PMP, as part of the updated PMP, Valley Water would implement BMP HM-11, requiring workers to wear personal protective equipment to reduce potential exposure to contamination levels established by OSHA. As described in Chapter 2, Project Description, Valley Water would implement a number of program-specific AMMs, including AMM HAZ-5, which would require Valley Water to provide wash stations at program work sites without mobile access to a nearby facility for any job where hazardous materials are handled. AMM HAZ-6 and compliance with VHP conditions (in VHP-covered program areas) would require testing, treatment, and proper disposal of soils with high mercury levels. requires that spill prevention kits are in close proximity when using any hazardous materials and that field personnel are appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills. Implementation of BMPs, AMMs, and VHP conditions would minimize the exposure of contaminated soils by program activities and provide for contaminated soils to be handled and disposed in compliance with all applicable laws and regulations. The impact would be **less than significant**.

Significance Determination

Less than Significant

Mitigation

No mitigation would be required for Impact HAZ-2.

Impact HAZ-3: 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)

Hazardous emissions associated with NOA and particulate emissions from construction vehicles and equipment in proximity to schools is analyzed in Section 3.8, Air Quality. Therefore, the following discussion focuses on potential impacts on schools related to the transport, use, and disposal of hazardous materials, substances, or waste.

As shown in Table 3.4-1, approximately 100 schools are within 0.25 mile of a program pipeline, many of which are directly adjacent to schools or cross a school property. Most of these schools are in session during a traditional school year, and some are open year-round. As described under Impact HAZ-1, various program activities, including setup, staging, and access, would involve the transport of limited quantities of potentially hazardous materials and the setup, use, storage, and disposal of those materials at program work sites, some of which may be in close

proximity to schools or on school property. Highways, city streets, and residential roadways currently are and would continue to be used to travel to and from program work sites, as well as for hauling material for disposal from program work sites.

Valley Water would comply with Section 21151.4 of the PRC, consulting with any school district with jurisdiction over a school within 0.25 mile of the program area about potential impacts on the school if a program activity may reasonably be anticipated to emit hazardous air emissions or involve the handling of an extremely hazardous substance or a mixture containing an extremely hazardous substance. In addition, as part of the program, Valley Water would implement its standard BMPs, several of which would reduce the potential for emissions or handling of waste near a school. BMP HM-9 would ensure proper hazardous materials management by requiring worker training, materials storage and containment, compliance with applicable discharge regulations, and reporting in the event of an emergency or spill. Furthermore, as part of the program, Valley Water would implement program-specific AMMs. AMM HAZ-2 and AMM HAZ-4 would minimize the potential to expose the public, including schools, to hazardous emissions or materials. AMM HAZ-2 would require using appropriate secondary containment and storage, reducing the risk of spills. AMM HAZ-4 would require that drivers transporting hazardous materials be appropriately licensed, reducing the risk of spills or releases during transport. Because the program would comply with all applicable regulations and would implement Valley Water BMPs and program-specific AMMs to ensure proper hazardous materials management, the program would not emit hazardous emissions within 0.25 mile of an existing or proposed school. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HAZ-3.

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment (less than significant)

Of the common program tasks, the following could involve hazard related to known contamination sites because they would involve ground disturbance:

- Excavation, construction, and other ground disturbance
- Bank stabilization, erosion control, and energy dissipation device maintenance

The analysis groups discussions of these tasks where they would result in similar impacts.

Excavation and Other Ground Disturbance; Bank Stabilization, Erosion Control, and Energy Dissipation Device Maintenance
As shown in Figure 3.4-1, 56 open EnviroStor cleanup sites, 46 open GeoTracker cleanup program sites, and 10 open GeoTracker LUST cleanup sites are within 0.25 mile from program

pipelines (DTSC 2023; SWRCB 2023). Although excavation work is not anticipated to be conducted directly on a listed site, a listed site could affect conditions at the program work site if excavation occurs nearby. Sources of exposure could include sediments and soils contaminated with mercury, PCBs, and organochlorine pesticides from historical land uses. The potential for a release to affect proximate site conditions would depend on various factors, including groundwater flow direction, distance from the release site, and type of contaminant. For example, groundwater contaminated with volatile organic compounds could migrate underneath an excavation site, and based on the volatile nature of the compound, could affect soil and groundwater conditions at the excavation site. Thus, excavation activities could be conducted in areas that have been affected by a hazardous materials release site and could expose workers or the environment to known or unknown contaminant sources.

Valley Water would comply with all State mandates and would be subject to the regulations of Section 65962.5 of the California Government Code, the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, and the Hazardous Waste Control Act for these hazardous materials sites. Any excavated spoil material would be stored within the ROW during the maintenance activity or hauled to staging areas. The excavated areas would be backfilled with the same excavated material or with imported soils, rock, or gravel. Spoils may contain hazardous material that were present in the spoils before excavation. As described in Chapter 2, Project Description, if imported backfill is used, excavated spoils would be removed from the site, tested, and disposed appropriately. Soil testing would be performed in accordance with applicable local, State, and federal regulations. Spoils determined to be contaminated and hazardous based on testing either would be disposed at permitted landfills (e.g., a Class I landfill in California), or at an out-of-state Class II landfill (for California-only hazardous wastes).

As discussed in Chapter 2, Project Description, Valley Water would implement various BMPs related to hazardous materials, including BMP HM-9, which would include measures for proper hazardous materials management. These would include requiring that all field personnel to be trained on proper response and corrective actions when toxic materials are discovered, which would reduce potential exposure and spread of toxic materials.

Furthermore, as presented in Section 3.4.5,Valley Water would implement program-specific AMMs. AMM HAZ-7 would require that GeoTracker and EnviroStor database searches be conducted for any ground-disturbing program activity, and if ground disturbance is proposed within 1,500 feet of any open site identified on the Cortese List, Valley Water would coordinate with the appropriate regulating agency to minimize the potential for the program activity to affect remediation of the site or create a significant hazard to the public or the environment. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HAZ-4.

Impact HAZ-5: Result in a safety hazard or excessive noise for people residing or working in the program area for program pipelines located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport (less than significant)

As described in Section 3.4.2, program pipelines and facilities are within the area of the San Jose Mineta International Airport land use plan and the Reid-Hillview Airport land use plan and within 2 miles of San Martin Airport and Frazier Lake Airpark. Program activities would be temporary and would be within or near the pipeline alignments. The program would not include construction of tall buildings or other structures that could interfere with airport operations or safety at surrounding airports; therefore, program activities would not impose a safety hazard to airport operations, nor would they impose a safety hazard to residents within an airport land use plan area or within 2 miles of an airport. Furthermore, as analyzed under Impact NOI-3 in Section 3.11, Noise, program implementation would not expose people residing or working in program work sites to excessive noise levels. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HAZ-5.

Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (less than significant)

Program activities would be performed by implementing various common tasks that would be temporary at any one location. Some of these activities would require temporary lane or road closures. Proposed program tasks that could require temporary lane or road closures would include:

- Setup, staging, and access
- Excavation, construction, and other ground disturbance
- Repair of pipeline system infrastructure
- Pump-out of vaults/manholes
- Vegetation management

Program tasks that require work within a roadway or, in some cases, immediately adjacent to a roadway, could require the temporary closure of a public roadway or lane. As described in Chapter 2, Project Description, Valley Water would implement a number of program-specific AMMs, including AMM TRA-1, which would minimize the potential for program lane or road closures to physically interfere with an emergency plan or evacuation plan. AMM TRA-1 would require development and implementation of a Traffic Control Plan. The Traffic Control Plan

would identify emergency response vehicle access for the given program work site, including identification of alternate routes if necessary. The Traffic Control Plan also would detail measures (e.g., construction signage, traffic control devices, and fencing) to keep the public out as necessary. Designated staging and parking areas would be identified in the Traffic Control Plan, so that the roadways would not be blocked or obstructed. The Traffic Control Plan would undergo review and approval by the appropriate jurisdictional agency. By implementing these program-specific AMM requirements, the program would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HAZ-6.

Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires (less than significant)

As described in Section 3.4.2 and analyzed in Section 3.13, Wildfire, various FHSZs are in the program area. Some of the program activities, such as vegetation management activities, ultimately would reduce wildland fire risks by reducing the fuel load. Other program activities would require the use of a vehicle to access a program work site, and on some occasions would require the use of heavy equipment. Using vehicles or heavy equipment in areas of higher fire hazards would carry a risk of igniting or exposure to a wildfire. As described in Chapter 2, Project Description, Valley Water would implement its standard BMPs as part of the program, including implementing BMP HM-12 to reduce the risk of wildfires from program activities. Implementation of BMP HM-12 would reduce the potential for accidental wildfire ignition by prohibiting smoking within 20 feet of any combustible materials, requiring appropriate spark arrestors on all program construction equipment, and making fire extinguishers and fire suppression equipment available at the work site. These preventative measures would minimize the potential for the program to cause a wildfire that could expose people or structures to loss injury or death. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact HAZ-7.

3.5 Transportation

This section provides an overview of transportation in the program area; applicable regulations, policies, and standards; and a discussion of the program's potential impacts related to transportation.

3.5.1 Environmental Setting

Overview

The environmental setting for this section includes the circulation system throughout Santa Clara County, a limited portion of eastern Merced County in which a 2.5-mile segment of the Pacheco Conduit is located, and the approximately 4.3-mile segment of the Santa Clara Conduit in San Benito County.

Regional Access

The program area is served by a roadway network under Federal, State, and various local jurisdictions, and is comprised of various major arterials, minor collectors, and local streets. Because Valley Water's pipeline infrastructure extends throughout the populated areas of the northern portion of the program area, many of the updated PMP pipelines and ancillary facilities are in urban environments and include high-traffic areas within the incorporated cities of Santa Clara County. The majority of pipelines in these developed urban environments are in utility easements within roadways (Valley Water 2007).

Starting in the southern portion of San Jose, the Almaden Valley Pipeline, the Calero Pipeline, and Cross Valley Pipeline and Extension, the Santa Clara Conduit, and Uvas-Llagas Transfer Pipeline are found within the valleys and hills of southern Santa Clara County, or in the flatlands of San Benito County, where the road network is limited to State Route 17 (SR 17), SR 85, U.S. Highway 101 (US 101), SR 152, and local streets. The remaining approximately 15 miles of pipeline include the Santa Clara Conduit and Tunnel and the Pacheco Conduit, which extend across the southeastern portion of Santa Clara County along SR 152 and into the western portion of Merced County at Pacheco State Park. This portion of the program area is remote and mountainous, with access mainly via SR 152 and local farm and fire roads.

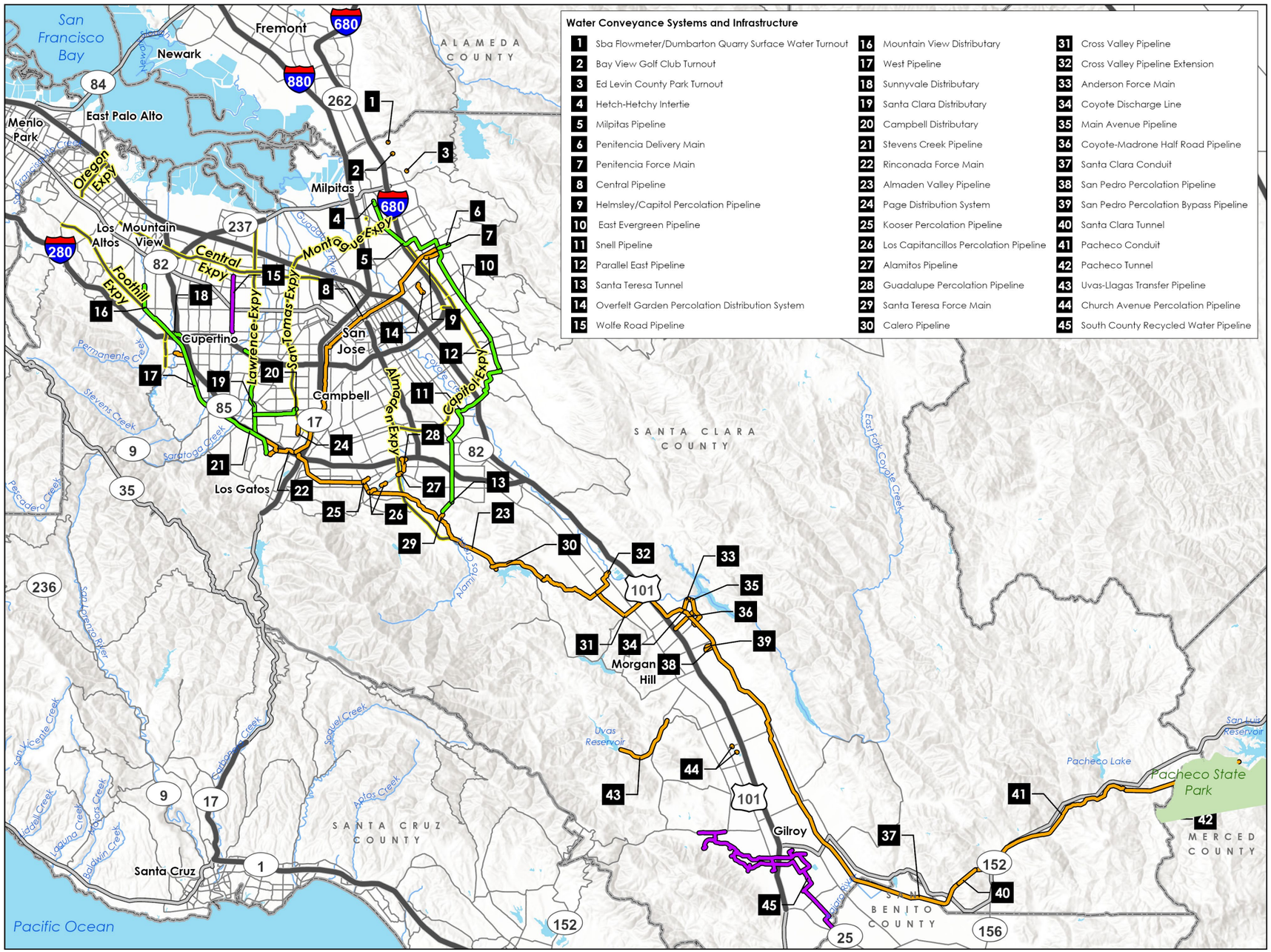
Figure 3.5-1 shows the highways, expressways, and major roads near program pipelines where program activities could occur.

Traffic Volumes

The interstate highways traveling in a general north-south direction experience the highest traffic volumes in the program area. US 101 traverses the majority of the program area and is highly congested, particularly during commute hours. The California Department of Transportation (Caltrans) provides annual average daily volumes of traffic for the major highways. US 101 has an annual average daily traffic (AADT) volume of 243,000 south of the interchange of Interstate 680 (I-680) North and I-280 West in San Jose, and 197,000 north of the

interchange (Caltrans 2023). US 101 also intersects with other important highways, such as I-680, and I-280, which provide important inter-county and inter-regional links to the East Bay and San Francisco. I-680 has an AADT of 132,000 south of Capital Avenue in San Jose and 134,000 north of Capital Avenue. I-280 has an AADT of 121,000 south of the interchange of SR 85 in Sunnyvale and 116,000 north of the interchange (Caltrans 2023).

Figure 3.5-1 Roadway Network



Local Transportation Network

The local transportation network in the program area includes roads used for vehicle access, public transit, bikeways, and pedestrian access.

Vehicle Access

shows the transportation network in the program area. All eight Santa Clara County expressways traverse the northern half of the program area and include the Oregon-Page Mill Expressway, Central Expressway, Foothill Expressway, Lawrence Expressway, San Tomas Expressway, Almaden Expressway, Capitol Expressway, and Montague Expressway. These expressways were built by the County and designed to relieve local streets and supplement the freeway system. The highest use expressways in the program area are Capitol, Lawrence, and Montague. Residential land uses, mixed with some commercial uses, are predominant along Almaden, Capitol, and Foothill expressways, while Montague expressway is surrounded mainly by industrial uses. The remaining four expressways support access to an equal mix of residential/commercial and industrial land uses (Santa Clara County 2003).

The Santa Clara County I-280 corridor runs west to east from Los Altos Hills to San Jose and serves residential communities, commercial areas, and high-tech industries, reflecting its surrounding land uses that vary among residential, commercial, and industrial. It is used primarily as a commute corridor between San Jose/Silicon Valley and San Francisco (VTA and City of Cupertino 2017).

In Santa Clara County, US 101 is an approximately 53-mile-long freeway that connects Gilroy to Palo Alto and passes through Morgan Hill, San Jose, Santa Clara, Sunnyvale, and Mountain View. SR 85 is a 24-mile-long freeway and principal arterial that connects southern San Jose to Mountain View.

The southern section of the program area contains several unpaved (gravel or dirt) roads that connect program pipeline stations, particularly along the Santa Clara Conduit and Pacheco Conduit. Some of these unpaved roads double as emergency fire access roads through large tracts of grazing land. The roads also function as rancher access roads. Valley Water has been granted use through owner agreements along these private roads and has full access to all locked gates in these areas through access agreements (Valley Water 2007).

Transit Service

Existing transit services consist of bus services, light rail transit (LRT), shuttle services, paratransit services, and inter-county services. Santa Clara Valley Transportation Authority (VTA) operates 70 bus lines, consisting of 17 core routes, one rapid route, 18 local routes, 18 community bus routes, 12 express routes, and four limited stop routes. VTA also operates a 42-mile LRT system that runs on three alignments: service between Santa Teresa in South San Jose and Alum Rock in East San Jose, service between downtown Mountain View and the Winchester Station in Campbell, and service between the Almaden and Ohlone-Chynoweth stations in South San Jose. VTA provides shuttle service to LRT stations and major Silicon

Valley employment destinations, activity centers, and transit facilities, and offers accessible paratransit services for seniors and disabled people.

Caltrain is a commuter rail service, provided by the Peninsula Corridor Joint Powers Board, passing through the program area. Between San Jose Diridon Station and San Francisco, 92 trains operate each weekday. Along the Caltrain line, 15 of the 31 stations are in Santa Clara County (VTA 2014).

The Bay Area Rapid Transit (BART) system currently has two stops in the program area, Milpitas and Berryessa/North San Jose. Future plans include VTA's BART Silicon Valley Extension Program Phase II, which will be a 6-mile, four-station extension that will bring BART from Berryessa/North San José through downtown San José to the city of Santa Clara (VTA 2023). Other rail and bus service providers with stops in Santa Clara County include the Downtown Area Shuttle, San Jose Airport Flyer, Monterey–San Jose Express, Capitol Corridor Intercity Rail Service, Altamont Commuter Express, Dumbarton Express, and Highway 17 Express (VTA 2014).

Bikeways, Trails, Pedestrian Circulation

Santa Clara County has an extensive network of more than 800 miles of bikeways and trails. As of 2016, more than 80 percent of these bikeways provided bicyclists with dedicated space, separate from motorists (and included bicycle paths, bicycle lanes, and cycle tracks) (VTA 2018b). Bicycle facilities typically are constructed and maintained by local jurisdictions in Santa Clara County, and almost all jurisdictions have adopted and updated their bicycle master plans in recent years. The Santa Clara Countywide Bicycle Plan, adopted by VTA in 2018, includes planning for a connected network of approximately 950 miles of Cross County Bicycle Corridors (CCBCs), including 10 bicycle superhighways and 280 new and improved bicycle connections across barriers. The purpose of the CCBCs, as described in the Bicycle Plan, is to provide access to jobs, schools, transit, recreation, services, and homes (VTA 2018).

Pedestrian facilities in the program area consist primarily of sidewalks, crosswalks, and pedestrian push buttons and signal heads at intersections (VTA 2018a). Pedestrian activity is high in Santa Clara County's downtowns and near major transit stops that serve Caltrain, LRT, and VTA's high ridership bus lines. VTA's highest volume bus stops are along El Camino Real, in downtown San Jose and East San Jose, and at major destinations such as De Anza College and Great Mall Transit Center (VTA 2017).

Recreational trails are further described in Section 3.16.

3.5.2 Regulatory Setting

Federal Regulations, Policies, and Standards

No federal regulations, policies, or standards pertain to transportation in the program area.

State Regulations, Policies, and Standards

California Senate Bill 743/California Environmental Quality Act

Senate Bill (SB) 743, which became effective in September 2013, initiated changes to Section 15064.3 of the State CEQA Guidelines to establish new criteria for determining the significance of transportation impacts. Specifically, SB 743 replaced automobile delay—as described solely by level of service or similar measures of vehicular capacity or traffic congestion—with vehicle miles traveled (VMT) as the recommended metric for determining the significance of transportation impacts. The intent of the change was to help achieve statewide goals related to infill development, the promotion of public health through active transportation, and the reduction of greenhouse gas (GHG) emissions.

To assist with implementation of the VMT metric, the Office of Planning and Research (OPR) prepared a Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018). OPR's Technical Advisory recommends that for land use projects, a per capita or per employee VMT that is 15 percent below that of existing development may be a reasonable threshold. In making this recommendation, OPR recognized that land use development projects (i.e., those involving residential, office, and retail proposals) tend to have the greatest influence on VMT. For other types of projects, lead agencies should consider the purposes in Section 21099(b)(1) of the PRC (i.e., promote reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses) in applying a threshold of significance. Qualitative analyses are acceptable when methods do not exist for undertaking a quantitative analysis.

Congestion Management Program

California Government Code 65088 requires that all urbanized counties in California prepare a Congestion Management Program (CMP). The legislation requires that each CMP contain the following mandatory elements: 1) a system definition and traffic level of service standard element; 2) a multimodal performance measures element; 3) a transportation demand management and trip reduction element; 4) a land use impact analysis program element; 5) a capital improvement element; 6) a countywide transportation model; and 7) multimodal improvement plans. The Santa Clara County CMP is administered and managed by the VTA via a joint powers agreement among Santa Clara County and its 15 cities (VTA 2021), and is discussed further under the Local Regulations, Policies, and Standards section.

Pacheco State Park General Plan

The California Department of Parks and Recreation's Pacheco State Park General Plan provides a planning framework for management and future growth of the park's facilities. The General Plan includes an Infrastructure and Operations element, with the following goals related to park access and circulation (California State Parks 2006).

Goal OPS-A1: Ensure safe and well-signed ingress and egress to SR 152.

Goal OPS-A2: Provide for intermodal emergency access to key areas of the Park as necessary.

Local Regulations, Policies, and Standards

Valley Transportation Plan and Local CMP

The Valley Transportation Plan (VTP) 2040 provides long-term guidance for transportation in Santa Clara County. The VTP's main objectives are to facilitate and create a transportation system that serves all socio-economic groups in a sustainable manner. In addition, the VTP aims to develop and implement advances in best practices for transportation in the county. Furthermore, the VTP aims to be an advocate for transportation projects, programs, and funding in the region. The VTA operates LRT and bus transit services, designs and funds highway and roadway improvements throughout the Santa Clara Valley, and oversees several transportation programs, such as the CMP, Valley Transportation Plan 2040, and Countywide Bicycle Plan (VTA 2015; 2018b; 2021).

Plan Bay Area 2050

Plan Bay Area 2050 is a regional long-range plan adopted by the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). It serves as the Bay Area's federally required Regional Transportation Plan and the Sustainable Communities Strategy (SCS) as required by State statute (MTC 2021). This PEIR was developed to be consistent with Plan Bay Area 2050. The Plan Bay Area 2050 Consistency Checklist and associated web maps were reviewed during development of this PEIR.

Santa Clara County

Santa Clara County General Plan

Adopted in 1994, the Santa Clara County General Plan, 1995-2010, guides traffic and transportation systems planning efforts for the county. The Transportation Chapter of the General Plan specifically provides strategies, policies, and implementation actions for alleviating congestion, safeguarding air quality, and looking toward future growth (Santa Clara County 1994). Policies include reducing commute times, implementing incentives to encourage alternatives to automobiles in congested areas, and increasing physical capacity of roadways.

General Plans of Incorporated Cities within Santa Clara County

The program area includes pipeline systems that traverse various incorporated cities and towns in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to transportation:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2010)

- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The transportation policies and guidelines in these general plans commonly encourage the conservation of mobility and flow of movement in the program area. Transportation continuity and connectivity remain a strong aspect of the goals and policies of the general plans listed above.

San Benito County

San Benito County General Plan

Adopted in 2015, the San Benito County General Plan 2035 guides traffic and transportation systems planning efforts for the county. The Circulation Element chapter of the General Plan specifically provides goals, policies, and implementation programs for creating multi-modal street connections, supporting walkability and pedestrian and bicycle safety, encouraging interconnected street networks, and upgrades for roadway improvement aesthetics.

San Benito Regional Transportation Plan

The San Benito Regional Transportation Plan (RTP) was developed by the Council of San Benito County Governments (SBCOG) as a 20-year policy to guide regional transportation issues in the county (SBCOG, 2018). Approximately 4.3 miles of the Santa Clara Conduit is within San Benito County and could be accessed from roads under this jurisdiction. PMP activities in San Benito County would be coordinated with the SBCOG for compliance with the applicable RTP.

Merced County

Merced County General Plan

The 2030 Merced County General Plan was adopted by the Board of Supervisors in 2013. The general plan is an overarching policy document that serves to guide planning and goals for development and growth throughout the County. The Transportation and Circulation Element includes circulation standards and planning policies and goals related to roadways, parking, transit, and bicycle and pedestrian circulation, among others (Merced County, 2013).

Merced County Association of Governments RTP/SCS

The Merced County Association of Governments (MCAG) serves as the regional transportation planning agency for Merced County. In 2022, the MCAG adopted their 2022 RTP/SCS, which is a long-range planning document that provides the framework for roadway, transit, bicycle and pedestrian infrastructure for through 2047 (MCAG, 2022).

3.5.3 Impact Assessment Methodology

Section 21099 of the PRC states that the criteria for determining the significance of transportation impacts must promote (1) reduction of GHG emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses.

Section 15064.3(b) of the State CEQA Guidelines addresses criteria for analyzing transportation impacts pursuant to SB 743, including criteria for “land use project” and “transportation

projects." The updated PMP is not a transportation project, nor is it considered a land use project. However, because worker trips associated with program activities would occur consistently throughout each year for the duration of the program, similar to operation of a small land use project, the analysis below treats it as a land use project.

Pursuant to Section 15064.3(b)(1) of the State CEQA Guidelines, VMT "exceeding an applicable threshold of significance may indicate a significant impact." Neither Valley Water nor the State have adopted any VMT thresholds of significance related to land use projects or programmatic infrastructure maintenance programs. However, OPR's Technical Advisory for Evaluating Transportation Impacts in CEQA identifies a screening threshold for small land use projects that would generate or attract fewer than 110 trips per day, as long as no substantial evidence exists that the project would generate a significant level of VMT, or that the project would be inconsistent with a Sustainable Communities Strategy (SCS) or general plan. (OPR 2018).

Because no evidence exists that the PMP would generate significant levels of VMT, or that the program would be inconsistent with any SCS, Valley Water has applied the screening threshold of 110 trips per day to the analysis below.

The program's potential impacts related to local circulation program, plan, and policy consistency; safety hazards; and emergency access were evaluated qualitatively based on knowledge of the types of roads in and around the program area, anticipated use of these roads to access program work sites, and the potential for traffic safety conflicts based on the existing traffic and road conditions, such as substrate, topography, width of road, and road condition.

Significance Criteria

The impacts of the program on transportation would be considered significant if they exceed the following standards of significance:

- **Impact TRA-1:** Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- **Impact TRA-2:** Conflict or be inconsistent with Section 15064.3(b) of the State CEQA Guidelines.
- **Impact TRA-3:** Substantially increase hazards related to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- **Impact TRA-4:** Result in inadequate emergency access.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of best management practices (BMPs) from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Although Valley Water's Best Management Practices Handbook contains transportation-related best management practices (BMPs), these BMPs required revisions and

updates to be more directly applicable to the PMP and has instead been incorporated into the program as a program-specific avoidance and minimization measure (AMM), described below.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the PMP to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to transportation are provided in Table 3.5-1.

Table 3.5-1. Transportation-Specific AMMs

AMM No.	AMM Requirements
AMM TRA-1	**Traffic Control Plan.** For program activities requiring encroachment into a city, county, or State-owned road, Valley Water or its contractor shall prepare a Traffic Control Plan (TCP). The TCP shall be prepared by a California-licensed Traffic Engineer or licensed civil professional engineer and conform to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and the Manual on Uniform Traffic Control Devices. At a minimum, the TCP shall include the following elements: • Circulation and detour plans to minimize impacts on local street circulation (haul routes will minimize truck traffic on local roadways to the extent possible). • A description of emergency response vehicle access (an alternate route shall be identified if the road or area is completely blocked, preventing access by an emergency responder). • Procedures to schedule construction activities in a manner that will minimize overlapping construction phases that require truck hauling to the extent feasible. • Identification of staging areas that will be designated for storage of all equipment and materials in a manner that minimizes obstruction to traffic. • Identification of designated construction worker parking locations. • Procedures for use of temporary signs, flashing lights, barricades, flaggers, and other traffic safety personnel or devices where required to control or direct the flow of traffic. • Temporary traffic marking installation requirements where required to direct the flow of traffic (traffic markings will be maintained for the duration of road/lane closure and removed when completed). • Procedures to keep sidewalks and bicycle lanes open for pedestrians and cyclists, respectively, to the extent safe, or identification of detour routes and signing if sidewalks or bicycle lanes will be closed. • Procedures to maintain driveway access to residences or businesses unless other arrangements are made. A minimum of 12-foot-wide travel lanes will be maintained unless otherwise approved by Valley Water and/or an agency with encroachment jurisdiction. Valley Water or its contractors will submit the TCP to the agency with encroachment jurisdiction in advance of program activities, to provide the agency with the opportunity to review the TCP and provide additional or alternative recommendations as appropriate. The contractor must submit documentation to Valley Water that the

AMM No.	AMM Requirements
	plan has been approved by the appropriate jurisdictional agency prior to the commencement of construction.
AMM TRA-2	**Equipment Routing near Roads and Pedestrian Pathways.** Pipes, hoses, and other equipment will be routed around roadways and pedestrian pathways (e.g., sidewalks, trails) to the extent feasible. When rerouting is not possible, pipes and hoses will be covered, and warning signage will be posted several feet beyond the location where the road or pathway is crossed by pipes or hoses, to notify the public regarding the hazard.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to transportation.

3.5.4 Impact Analysis

Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities (less than significant)

As discussed in Chapter 2, Project Description, the updated PMP would include inspection, repair, and maintenance of existing access roads that are used for ingress and egress to program pipelines and infrastructure. The anticipated scope of road repairs would include grading, paving, graveling, and installing green infrastructure (e.g., French drains) to reduce runoff and erosion. Similar to the existing PMP, the updated PMP would not involve the modification or redesign of any circulation systems, and no changes to the use of existing roadways would result from program implementation. The program's impacts on circulation systems would be limited to vehicle trips generated by mobilization, demobilization, and transport of worker vehicles and construction equipment and materials to various program work sites throughout the program area (further discussed under Impact TRA-2) and lane or road closures required to conduct program-related work on pipelines within public roadways or street rights-of-way (further discussed under Impact TRA-3). Any disturbed surfaces would be restored to near pre-activity conditions after completing maintenance activities. The small and dispersed scale of vehicle trips and temporary and short-term roadway closures would not conflict with any identified regional or local policies, plans, or programs that pertain to the circulation system, transit, roadway, and bicycle or pedestrian facilities, such as the Santa Clara County General Plan, CMP, or other plans. The impact would be **less than significant**.

Significance Determination

Less than Significant

Mitigation

No mitigation would be required for Impact TRA-1.

Impact TRA-2: Conflict or be inconsistent with Section 15064.3(b) of the State CEQA Guidelines (less than significant)

As described above, Section 15064.3 (b)(1) of the State CEQA Guidelines states that VMT "exceeding an applicable threshold of significance may indicate a significant impact," and Valley Water has determined that the applicable threshold for the PMP is 110 trips per day.

As described in Chapter 2, Project Description, most program activities generally would require less than 1 week and fewer than 10 workers per day to complete. For example, a larger program activity, such as replacement of a segment of pipeline, may require up to 12 workers per day for a 3-week period. This would generate a maximum of approximately 24 one-way trips per day over the work period. A smaller program activity, such as non-ground-disturbing repair or vegetation maintenance at an existing facility, may require only one worker for 1 day, generating two one-way trips over the 1-day period. Valley Water currently conducts routine maintenance and inspections of program pipelines and infrastructure under the existing PMP, and the number of workers proposed under the updated PMP would be similar to those required under the existing PMP. Therefore, the average daily one-way worker vehicle trips would be similar to existing conditions. A maximum of approximately 20 crewmembers would be working at various program work sites simultaneously, which could result in up to approximately 40 vehicles trips per day program wide. The location of vehicle trips would vary widely and would be split among various roadways in the program area, as is the case with implementation of the existing PMP.

The average number of trips that would be generated would not exceed the screening threshold of 110 trips per day. Therefore, the VMT associated with program implementation would not conflict with Section 15064.3(b) of the State CEQA Guidelines. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact TRA-2.

Impact TRA-3: Substantially increase hazards related to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (less than significant)

As discussed under Impact TRA-1, the program would include maintenance of existing infrastructure, including access roads used for ingress and egress. However, the program would not include any tasks to redesign, modify, or change the use of any existing roadways. Maintaining existing access roads would not increase hazards, and instead would provide safe and improved access routes for periodic inspections and maintenance of the program pipelines.

As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Some of these tasks could occur adjacent to or within

public roads, which could increase traffic hazards or result in an incompatible use because of the presence of workers, heavy equipment, and active construction. These program tasks would include:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Excavation, construction, and other ground disturbance
- Repair of pipeline system infrastructure

A discussion of impacts is presented by program tasks below and grouped where certain tasks would result in similar impacts.

Setup, Staging, and Access; Excavation and Construction; and Repair
Program tasks such as staging, excavation, construction, and other ground disturbance as well as repair of pipeline system infrastructure may be required within or along various public rights-of-way, such as city streets, highways, and pedestrian corridors. The operation of heavy construction equipment; need for lane/road, bicycle lane, or sidewalk closures; and/or narrowing of travel lanes could result in temporary hazards to motorists, pedestrians, and cyclists as well as impede traffic flow. Rural roads often are narrow, with less traffic than urban streets. Nonetheless, staging in or along rural roads would pose hazards to workers and oncoming traffic if staging would occur near blind corners, on narrow roads, on steep gradients, or on gravel/dirt roads. Therefore, in various instances, implementation of these program tasks could increase hazards or result in incompatible uses. However, implementation of AMM TRA-1, which would be implemented as part of the program, would require Valley Water or its contractor to develop a Traffic Control Plan (TCP) for any program activities that would require encroachment into a public roadway. The TCP would require site-specific and program task-specific knowledge, which would not be available until completion of the design phase for the individual program task. AMM TRA-1 would also require the contractor to provide Valley Water with documentation of TCP approval by the appropriate jurisdictional agency before the start of construction. The TCP would require implementation of appropriate traffic controls, such as barricades, flagging, and signs to provide adequate warning to the public of road conditions and allow for safe circulation around program work sites. The TCP also would be required to identify procedures to maintain safe sidewalk and bicycle lane access for pedestrians and cyclists, respectively.

Furthermore, the program-related impacts on roadways would be temporary and short term. After completion of the program activities, all staging areas, stockpiles of construction materials and debris, and construction equipment and vehicles would be demobilized and transported off-site, and program work sites would be returned to near pre-activity conditions. The impact would be **less than significant**.

Pump-out, Dewatering, and Refilling
Draining a pipeline (either before maintenance work or before refilling) through pump-out and blow-off points may require the use of surface pipes, hoses, and other equipment to deliver the water to the appropriate point of release. This task could introduce a temporary hazard to pedestrians. As described in Chapter 2, Project Description, Valley Water would implement AMM TRA-2 as part of the updated PMP. This measure would require that pipes, hoses, and other equipment be routed around pedestrian pathways (e.g., sidewalks, trails) to the extent feasible, to reduce the potential for trip hazards or access constraints to the public. If rerouting would not be possible, pipes and hoses would be covered, and warning signage would be posted several feet beyond the location where the pathway was crossed by pipes or hoses, to reduce hazards to the public. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact TRA-3.

Impact TRA-4: Result in inadequate emergency access (less than significant)

As discussed under Impact TRA-1, lane or roadway closures may be required to accommodate various program tasks to inspect and maintain pipelines within or adjacent to public roads. Such closures would be temporary, with the duration generally ranging from one (1) day to a few weeks, depending on the specific program activities being conducted. These program tasks would include:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Excavation, construction, and other ground disturbance
- Repair of pipeline system infrastructure

A discussion of impacts is presented by program tasks below and grouped where certain tasks would result in similar impacts.

Setup, Staging, and Access; Excavation and Construction; and Repair
Staging and access for pipeline maintenance could occur within or along paved and unpaved roadways and trails. Several pipelines in the rural environment traverse private ranch lands. Valley Water maintains access agreements with ranchers to access Valley Water facilities on private land. Private land access roads often double as emergency access roads, particularly for fire protection. These roads are not traveled frequently as they are on private land and usually are gated. Most pipelines are not under an access road but to the side of the road, within an adjacent field. Valley Water's standard practice is to stage projects in existing disturbed areas, and commonly occurs along roadways.

Furthermore, as described under Impact TRA-3, many pipelines are within roadway ROWs (particularly in urban areas), and program activities to be implemented for these pipelines may require closure of roadways, some of which may be used as emergency access. Use of roadways and trails to accommodate program activities could temporarily impair emergency access, if program equipment or activities physically would block the access routes for emergency personnel. However, as described in Chapter 2, Project Description, Valley Water or its contractors would implement AMM TRA-1, requiring a TCP, which would include a description of emergency response vehicle access routes that would be compatible with the proposed program activity or identify an alternate route if the road or area was to be blocked completely, preventing access by an emergency responder. The impact would be **less than significant**.

Pump-out, Dewatering, and Refilling

Pipeline draining for repair work usually occurs through blow-off pipes within embankments of streams or drainage channels. The equipment necessary for draining would be staged near draining points. Several draining valves would be accessed remotely or accessed from within a vault and would not present emergency access impediments. However, pump-out of water from vaults sometimes may be necessary and would involve some staging and placement of hosing, potentially across a road or emergency access route in either an urban or rural area. Pipeline water release piping would be flexible and could be moved quickly in emergency situations, so as not to impede emergency access. Furthermore, as discussed under Impact TRA-3, AMM TRA-2 would be implemented as part of the program. This measure requires that piping or hoses be routed to minimize hazards to traffic movement, including emergency access, or that the pipeline be covered, and signage be posted to notify nearby traffic. The impact would be **less than significant**.

Significance Determination

Less than Significant

Mitigation

No mitigation would be required for Impact TRA-4.

3.6 Cultural Resources

This section describes the archaeological, prehistoric, ethnographic, and historical background of the program area, including historical resources and historic properties. This section also provides an overview of applicable regulations, policies, and standards, and discusses the program's potential impacts to cultural resources. Information in this section was developed from the *Cultural Resources Study* (Far Western 2024) and the *Historic Resources Report* (JRP 2023), which are provided in Appendices H and I, respectively.

3.6.1 Definitions

This subsection introduces key concepts and terms used in the evaluation of cultural resources.

Cultural Resources

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for the historical significance they possess or convey. Cultural resources include the following types of resources: prehistoric and historic-era archaeological deposits, historic-era features such as roads and railroad tracks, buildings and structures of architectural significance, and places that are important for maintaining a community's identity or culture (that is, traditions, beliefs, lifeways, and social institutions).

Archaeological Sensitivity

Archaeological sensitivity refers to the factors that influence where archaeological sites tend to be located.

Buried Site

A buried site refers to archaeological materials or a site that is now covered by natural alluvial, colluvial, and/or wind-blown deposits, which are often associated with formerly stable land surface marked by buried soils, also known as paleosols.

Historic Properties

Historic properties are cultural resources that are found eligible for listing in the NRHP by meeting the criteria in Title 36 CFR 60.4. Generally, for a cultural resource to be considered a historical resource (or a historic property), it must be at least 50 years old. However, properties less than 50 years of age that are of exceptional importance or are contributors to a district can also be included in the California Register of Historic Resources (CRHR) and/or NRHP.

3.6.2 Environmental Setting

The study area used to assess the program's impacts on cultural resources includes all program pipeline alignments listed in Chapter 2, Project Description, as well as a 0.25-mile buffer surrounding the pipeline alignments. This buffer would conservatively encompass all areas that may be directly or indirectly disturbed by program implementation.

Regional Setting

The program area lies primarily within the Santa Clara Valley, a wide plain bounded by the Santa Cruz Mountains on the west, the Diablo and Gabilan ranges on the east and south, and San Francisco Bay on the north. The valley includes two drainage catchments. The northern portion of the valley drains northward into San Francisco Bay through the parallel, axial drainages of Coyote Creek and Guadalupe River. Numerous other tributary streams feed these drainages entering the northern valley from the adjacent Diablo range and coastal mountains.

The southern Santa Clara Valley (which begins near Morgan Hill) drains into the Pajaro River which ultimately reaches Monterey Bay north of Moss Landing. Key tributaries include Llagas and Uvas-Carnadero creeks, on the west, and Dexter and Tennant creeks, on the east. A small portion of the program area extends eastward across the Diablo range to the foothills of the San Joaquin Valley, just north of Pacheco Peak.

Valley floor elevations rise from sea level at the edge of San Francisco Bay, to 145 meters above mean sea level (amsl) near the break in drainage catchments at Morgan Hill, declining southward to 45 meters amsl near the confluence of Llagas Creek and the Pajaro River. Given the nature of adjacent alluvial fans and terraces, elevations vary widely along margins of the valley. For example, the Santa Cruz Mountains range in elevation from 500 to 1,000 meters. The northern edge of the valley included an extensive tidal wetland of freshwater marshes, salt marshes, mud flats, and sloughs leading to the open water of San Francisco Bay (Far Western 2024).

Archaeological Context

The Santa Clara Valley landscape has changed significantly during the 13,000 or more years since humans first occupied the region. Large, deeply incised drainages once flowed from the program area out through the Golden Gate during the late Pleistocene. The lower end of these drainages was inundated by rising ocean waters when continental glaciers began to melt with the onset of the Holocene. Sea-level rise was quite rapid between 12,000 and 6,000 calibrated years before the present (cal BP), roughly two centimeters per year, resulting in the development of the San Francisco Bay estuary. After 6000 cal BP, the rate of glacier melting slowed, and Holocene terrestrial sedimentation outpaced the rate of sea-level rise, resulting in the extensive tidal marshes and mudflats seen today at the south end of the bay.

Throughout the Holocene, floodplains and alluvial fans of the Santa Clara Valley experienced repeated cycles of deposition, erosion, and stability, processes that have strongly influenced the preservation of the local archaeological record. Geoarchaeological studies of the Santa Clara Valley-San Francisco Bay area indicate that a large portion of the early and middle Holocene archaeological record lies deeply buried under more recent alluvial deposits. In fact, more than 60 percent of recorded archaeological sites in portions of the Santa Clara Valley are buried. Most of these sites are associated with buried soils located near major drainages (e.g., Guadalupe River, Coyote Creek). The low frequency of sites dating to the early and middle Holocene has led some researchers to conclude (perhaps, incorrectly) that human populations were lower during that time span. In contrast, archaeological sites from the late Holocene (<4000 cal BP) are

numerous and well documented in the Santa Clara Valley, reflecting one of the most complex hunter-gatherer records in North America.

Cultural Context

The following geological time periods provide cultural context for the study area.

Terminal Pleistocene (13,500-11,700 cal BP)

The Terminal Pleistocene is largely contemporaneous with the Clovis and Folsom Periods of the Great Plains and the Southwest and is generally thought to be associated with wide-ranging, mobile hunters and gatherers. No fluted points or archaeological deposits dated to the Terminal Pleistocene have been documented in the Santa Clara Valley or wider Bay Area. The absence of Terminal Pleistocene archaeological remains is undoubtedly the result of several factors, most notably the likelihood that initial human populations were small, highly mobile, and traveled rapidly across the continent. Therefore, their archeological signature on the landscape must have been faint and widely spaced. For coastal areas, sea-level rise, coastal erosion, and localized subsidence and widespread deposition, have further reduced the likelihood of documenting initial occupation of the region (Far Western 2024).

Early Holocene (11,700-8200 cal BP)

Well-preserved Early Holocene archaeological deposits are rare in Santa Clara Valley. In addition to milling tools, Early Holocene sites in Central California frequently contain large broad-stemmed projectile or spear points with convex or flat to indented bases and broad stems, resembling Borax Lake points from the North Coast Ranges and those typical of terminal Pleistocene and early Holocene sites in the Great Basin (Far Western 2024).

Middle Holocene (8200-4200 cal BP)

The beginning of the Middle Holocene (ca. 8200 cal BP) in Central California is marked by a substantial change to warmer and drier conditions. Tulare Lake shrank in size and eventually desiccated, matching similar declines at Clear Lake and lake basins in the eastern Sierra Nevada. Oak woodlands expanded upslope and conifer forests moved into alpine zones in the Sierra. Although conditions were generally arid, significant new wetland habitats were forming in Central California as sea-level rise was forcing development of San Francisco Bay and the Sacramento-San Joaquin Delta along with associated marshlands. Substantial changes also occurred to the geomorphic landscape. Following an initial period of upland erosion and lowland deposition, about 6200 cal BP, fans and floodplains stabilized. This period of landscape stability is represented by middle Holocene-age buried soils found in alluvial landforms throughout Central California.

Artifact assemblages are varied and include ground stone (some only with millingslabs and handstones, some with mortars and pestles, and some with both); side-notched dart points, cobble-based chopping, scraping, and pounding implements, and shell beads and ornaments (Far Western 2024). The presence of multi-season residential sites, including the basal layers of some bay margin shell mounds, suggests higher population levels, more complex adaptive strategies, and more permanent occupation than during the Early Holocene.

Late Holocene, Early Period (4200 cal BP-2770 cal BP), Middle Period (2770-930 cal BP), Middle/Late Transition (930-685 cal BP), Late Period (685-180 cal BP)
Sites from the Early Period of the late Holocene appear to represent among the first sedentary or semi-sedentary settlements in the northern Santa Clara Valley region and include large numbers of flexed burials often associated with red ochre, *Olivella* spire-lopped and rectangular (L-series) beads, geometric shell ornaments, side-notched and leaf-shaped projectile points, cobble-core tools, notched net weights, and numerous bone tools including whistles, scapula saws, and elk antler wedges.

Throughout Central California, the Middle Period is associated with the development and proliferation of many specialized technologies, including new types of bone tools, including harpoons, shaft wrenches, and awls. Mortars and pestles were widely used in conjunction with an increased focus on processing acorns through active leaching (Far Western 2024). Most residential sites dating to the Middle Period include large quantities of fish bone and fishing implements, as well as a diverse assortment of mammal and bird bones.

Throughout the Late Period, large villages were established on alluvial ridges and levees throughout the Santa Clara Valley. Fishing was an important component of the indigenous economy during the Late Period in some regions of the San Francisco Bay area, as bone from resident freshwater and marine fish is abundant, and fishing equipment is common, including several types of bone spears and harpoons, J-shaped hooks, bi-pointed gorges, and bone mesh gauges for making nets. Mortars and pestles were used almost exclusively during the Late Period. There is substantial archaeobotanical evidence suggesting that small seeds, in addition to acorns, were stored for off-season use, and became one of the primary types of plant foods eaten by Santa Clara Valley people during the Late Period (Far Western 2024). Extensive trade relations appear to have flourished with neighboring groups during this period.

Ethnographic Context

The Santa Clara Valley falls within the traditional territory of Ohlone-speaking Native Americans (Far Western 2024). To the east, on the other side of the Diablo Range, were Yokuts speakers who lived in the northern San Joaquin Valley.

The *Ohlone* (historically referred to as Costanoan) language group is either considered a distinct language family, comprised of eight languages, or represents a distinct branch of the same language family that also includes Bay, Coast, and Plains Miwok; Native groups who occupied adjacent lands to the north and northeast. Under the latter framework, Ohlone and Miwok have been grouped with the Yokuts, as a related family of Yok-Utian languages. Two Costanoan languages are distinguished within the Santa Clara Valley: the Tamyen or Santa Clara Costanoan, spoken in the northern valley; and Mutsun, spoken in the southern valley along the Pajaro River and Monterey Bay region (Far Western 2024).

As important, if not more so, than these linguistic patterns, was the basic territorial and political structure of the region. Historically referred to as tribelets, these politically autonomous communities were typically made up of one or more villages that controlled a well-defined

territory (the foraging area of a group). Population sizes of *Ohlone* communities typically ranged from 50 to 400 people. Territorial boundaries defined the range of resources that could be exploited during the annual cycle (Far Western 2024).

A wide range of ceremonial activities were carried out within and between communities, including dances (often inside brush enclosures with restricted access), ritual offerings (generally placed on pole tops), and myth telling with singing and music. Burial practices included destroying/burying items of personal ownership, varied within the *Ohlone* area, and cremations were more widespread than inhumations in the *Chochenyo* area. Sweat houses and menstruation houses, situated outside the village, were also important venues of structured social interaction. Sacred places in the landscape, such as nearby Mt. Diablo and Brushey Peak, also played an important role in ceremonial activities.

Subsistence activities included gathering wild foods such as acorns and various nuts, seeds, roots, and berries, hunting large and small mammals, waterfowl and other birds, and fishing in perennial streams and along the estuary. For near-shore and bay inhabitants a range of marine resources were also collected. Baskets of varied design were used in all stages of plant gathering and processing, while the bow and arrow was a common hunting weapon, animals and birds were frequently taken with traps, nets, and cooperative hunts. The tule balsa was the primary watercraft, used with a double-bladed paddle.

Historical Context

Sixteenth-century sea-going European explorers were the first to reach the outer coastline of the San Francisco Bay Area. It was not until the late eighteenth century that Spanish colonizers visited the Santa Clara Valley as an initial step toward founding missions, presidios, and pueblos.

The 1776 expedition led by Juan Bautista de Anza and Pedro Font traversed the northern portion of the valley and made observations regarding the natural setting and Native American villages in preparation for the establishment of new Spanish outposts. They established the Presidio and Mission of San Francisco later that year. Jose Joaquin Moraga and Fray Tomas de la Pena followed and established the Mission Santa Clara de Asis on the west bank of the Guadalupe River in 1777, at the northeastern edge of Tamien tribal territory. Later that same year, Governor Don Felipe de Neve was given the task of forming an agricultural town to provision the military presidios in San Francisco and Monterey. He recruited settlers from San Francisco and placed the townsite across the river from Mission Santa Clara. The colonists planted corn, beans, wheat, hemp, and flax, and cultivated vineyards and orchards.

The establishment of the missions, pueblos, and presidios marked the onset of active coercement and resettlement of Native Americans into the mission feudal system. Local populations began to decline, due in large part to introduced diseases. Environmental changes were also a significant factor, as the Spanish altered the landscape into one more suitable for livestock grazing and farming. Local streams and creeks near the mission were diverted and claimed for the farms and orchards. Eventually, population decline, and landscape alteration

forced people into the mission system, and the survivors learned to adapt to the new economy. By 1795, all of the Tamien villages had been abandoned and their inhabitants had been baptized.

When Mexican Independence was achieved in 1822, control of California passed from Spain to Mexico. The new Mexican government instituted many changes to develop their new colony. Secularization of the missions in 1834 redistributed some of the church's vast land holdings to California citizens, and large ranchos were established in the late 1820s and 1830s to support the vast cattle herds. In the Santa Clara Valley, 38 land grants were issued between 1833 and 1845. Each rancho was typically self-supporting, with cultivated fields, vineyards, and grazing land, as well as tanneries, grist mills, and other small-scale industrial endeavors.

After the Mexican American War in 1846 and acquisition of California by the United States in 1848, the Gold Rush began, bringing more people to California. The Gold Rush also sparked interest in the cinnabar deposits south of San Jose in the Santa Cruz Mountains. These deposits, the New Almaden Mines, contain mercury, which was necessary to help separate gold from ore. Although mining had begun in 1845 during the Mexican era, they were intensively worked following the discovery of gold, and were the largest mercury mines in North America.

The great influx of Gold Rush-era immigrants created new economic opportunities for the farmers and ranchers of Santa Clara Valley. Livestock continued to be the greatest market, although the focus changed from hides and tallow to meat to feed the Sierran mining camps. Initially, cattle were allowed to range over the large ranches, but as more farmers settled the valley and broke up these large land holdings, cattle raising became concentrated in the foothills. The fertile valley was also favorable for wheat crops, and Santa Clara County produced 30 percent of California's total wheat crop by 1854. After about 1875, horticulture became the favored pursuit, with fruit production gaining in prominence. Horticulture continued to drive the county's economy until the advent of the high-technology industry during the postwar era.

The City of San Jose developed rapidly in the mid-nineteenth century, especially once the Guadalupe River had been sufficiently channelized to reduce the threat of flooding. San Jose's growth and its ascension to the mercantile and financial center of the Santa Clara Valley and southern San Francisco Bay Area is due in large part to the valley's agricultural production. Expansion of horticulture continued in the greater Santa Clara Valley into the early twentieth century, buoyed by the high market value of fruit and advances in refrigeration and food processing technologies. San Jose also had an advantageous geographical position relative to transportation, being located at the southern end of San Francisco Bay along two transcontinental railroad lines–Southern Pacific Railroad and Western Pacific Railroad–and branch lines to San Francisco and south down the Santa Clara Valley and beyond.

Important to the development of San Jose were the nearby military and military-related activities. Operations at Naval Air Station Moffett Field in Mountain View during World War II helped usher in the high-tech sector to the South Bay region. Astute San Jose business leaders

recognized opportunities presented by the changing economy and sought to capitalize on the situation at hand. Soon after the war they launched a successful campaign to attract new non-agricultural related industries to San Jose, touting the rich high-tech business environment. The electronics boom of the 1980s transformed Santa Clara Valley into Silicon Valley, home to 895,000 in 2000.

Road and freeway construction further boosted growth in the San Jose region. Nearly half of the $23.4 million in San Jose's 1957 capital improvement plan budget was earmarked for roadway improvements that included adding new boulevards, widening, or extending existing streets, and providing grade separations to relieve congested intersections.

The forces that pushed the growth and expansion of San Jose in the postwar years also affected adjacent cities. Places like Santa Clara, Sunnyvale, Cupertino, Saratoga, Campbell, and Los Gatos similarly experienced spatial growth and population increases, driven by new residential subdivisions and commercial development. As these processes played out in the northern Santa Clara Valley, the southern Santa Clara Valley in the vicinity of Morgan Hill and Gilroy, retained its rural character for a longer period. Abundant open space and agricultural land persisted in the southern Santa Clara Valley until the late 1970s when high-tech firms began locating in Morgan Hill. Further facilitating the development of this region was the improvement of U.S. Highway 101 into a freeway by Caltrans, making commuting to San Jose and other northern destinations easier.

Santa Clara County Water Facility History

In the early agricultural period, water for irrigating crops grown in the Santa Clara Valley came from artesian wells augmented by diversions from the many small creeks flowing from the adjacent mountains. In the late-nineteenth century, and early twentieth century, however, as horticulture flourished and the demands increased, farmers pumped more and more groundwater out of the natural aquifers. Pump technology steadily improved, allowing deeper wells and greater volumes of water to be drawn. By the 1920s, this once abundant resource had become endangered; groundwater was being depleted faster than it could be replenished, and groundwater levels steadily dropped. At the same time, the growth of towns and cities in the region increased municipal demands for the same underground water. Measurements taken in 1929 noted a 50-foot drop in the groundwater level since 1925. Not only was this recognized as an unsustainable trend, drop in water table caused the ground to subside in many areas and increased the pumping costs of farmers (JRP 2023).

These factors led valley leaders and local engineers to seek a means to reverse this trend and replenish the underground aquifers. Among the leaders of this effort was the Santa Clara Valley Water Conservation Committee formed by a group of prominent Santa Clara Valley citizens. The committee hired prominent northern California hydraulic engineers Fred H. Tibbetts and his partner, Stephen Kieffer, to undertake a study of the valley's water problems and develop a plan. It was Tibbetts and Keiffer who developed the original concept of the Santa Clara Valley Water Conservation District system, and it was Tibbetts who designed six of the seven dams of the system's original phase of construction between 1932 and 1936 (JRP 2023).

After several years of study, Tibbetts and Kieffer proposed a system of reservoirs, percolation areas, canals, and flood control structures to capture and retain the water of the streams flowing into the valley for the purpose of groundwater recharge. They regarded any water from a creek or stream that made it to San Francisco Bay as "wasted," and the project at this time was called the "Wastewater Salvage Project." To carry out the project, Tibbetts and Kieffer recommended the establishment of a water conservation district to build, own, and manage the system, which would be supported by taxes levied on the water users in the would-be district. The Santa Clara Valley Water Conservation Committee, and other groups such as the Santa Clara County Citizens' Committee and the Farmers' Committee, enthusiastically supported the plan and in the late 1920s proceeded to lobby for creation of such a district among landowners who would need to vote to approve establishment of a district. Supporters of the plan employed rhetoric to generate support, spelling out dire conditions and a bleak future if nothing was done. Voters defeated establishment of a water conservation district in 1927 and again in 1928, but as water levels in local wells continued to fall, voters finally approved the measure in 1929 and the Santa Clara Valley Water Conservation District (District) formed on November 12, 1929 "for the primary purpose of salvaging the waste waters of the various streams in the Valley" (JRP 2023).

With approval of the district and a system plan in place, the District and Tibbets and Kieffer proceeded with design and construction. The system sought to store and distribute water to the best percolation areas in the Santa Clara Valley where it would soak back into the soil and replenish the groundwater. Tibbets and Kieffer final plan consisted of six major dams, along with canals and percolation facilities. The original upstream storage dams in the foothills of the Santa Cruz Mountains and Diablo Range flanking the Santa Clara Valley were Almaden, Calero, Guadalupe, Vasona, Stevens Creek, and Coyote built in 1935 and 1936. Coyote Reservoir was the largest in the system. Downstream, the District completed the Coyote Percolation Dam in 1934 on Coyote Creek near Metcalf Road to create an in-stream percolation reservoir. In addition to the Coyote Percolation Reservoir, the District undertook other smaller in-stream improvements to enhance percolation such as constructing low dams in areas naturally conducive to percolation. Three canals rounded out the other original main elements of the system: the Almaden-Calero Canal (1935), Vasona Canal (1936), and Coyote Canal (1936-37). The Almaden-Calero Canal carried excess water four miles from the smaller Almaden Reservoir to the larger Calero Reservoir. The Vasona Canal carried water from Vasona Reservoir on Los Gatos Creek to San Tomas Aquinas Creek where it flowed to in-stream percolation areas. On the opposite side of the valley, the Coyote Canal diverted water from Coyote Creek at a point in present-day Anderson Lake County Park and conveyed it 9 miles to the Coyote Percolation Reservoir. The water carried by the Coyote Canal was stored water released from Coyote Reservoir upstream in the Diablo Range (JRP 2023).

In 1934, funding for the majority of dam construction and construction of the Vasona Canal and a section of the Coyote Canal came from a bond issue passed by the members of the District. A supplemental bond passed in 1936 and federal Public Works Administration funds enabled completion of these early works. When the system was completed, the District boasted of being the first water conservation system of its type in the state (JRP 2023).

The efforts of the District proved successful and groundwater levels began to rise. Between 1936 and 1943, the water table rose 76 feet on average. But groundwater pumping increased dramatically in 1947 during a drought and groundwater levels rapidly declined. The drought combined with ever increasing water usage associated with population growth, urban expansion, industrial use, and more year-round irrigation resulted in Valley Water's continued improvement and expansion of its system in the 1950s. This included construction of Anderson Dam (1950), Lexington Dam (1952), Coyote-Alamitos Canal (1953), Alamitos Percolation Pond (1953), Coyote Canal Extension (1954), Evergreen Canal (1954), and the Upper and Lower Page Canals (1954). Valley Water also expanded its service area in the 1950s with the incorporation of about 4,000 acres in the Evergreen area in east San Jose, and the merger with the Central Santa Clara Valley Water Conservation District, which included land from Coyote south to the southern city limits of Morgan Hill (JRP 2023).

Despite the increased storage capacity created by Anderson Dam and Lexington Dam, Valley Water still did not have enough water to satisfy its customers and began importation of water from outside of Santa Clara County via the Hetch Hetchy Bay Division No. 3 Pipeline, which was built around the southern end of San Francisco Bay through northern Santa Clara County in 1952. This was supplemented with water from Hetch Hetchy Bay Division No. 4 Pipeline built in 1973. The Hetch Hetchy water provided water directly to local water retailers in Milpitas, Sunnyvale, Mountain View, and Palo Alto (JRP 2023). In response to continued population growth and water demand, Valley Water devised plans to import additional water from the California State Water Project (SWP) through the SWP's South Bay Aqueduct, the first delivery of which occurred in 1965 (JRP 2023).

The water added to the District's system in the 1950s, 1960s, and 1970s required additional infrastructure to ensure continued groundwater recharge and deliveries to water retail clients. To manage the new water and make more efficient use of existing in-county sources, Valley Water embarked on a program in the mid-1960s to construct a system of pipelines and its first water treatment plant (JRP 2023).

Valley Water's pipelines were designed to carry either raw water or treated water. The raw water was delivered from imported or local sources to treatment plants or to streams and ponds for groundwater recharge. The treated water came from one of the treatment plants and was sent to water retailers. Major raw water pipelines constructed during this period were the Guadalupe Water System (1961), South Bay Aqueduct Flowmeter/Dumbarton Quarry Surface Water Turnout (1963), Alamitos Pipeline (1964), Helmsley/Capitol Percolation Pipeline (1964), Central Pipeline (1965), Bay View Golf Club Turnout (1965), Ed Levin County Park Turnout (1966), Page Distribution System (1966), Rinconada Force Main (1967), Almaden Valley Pipeline (1966), Stevens Creek Pipeline (1967), Penitencia Force Main (1974), and Overfelt Garden Percolation Distribution System (1976). Pipelines distributing treated water include the West Pipeline (1967), Campbell Distributary (1967), Santa Clara Distributary (1967), Sunnyvale Distributary (1970), East Evergreen Pipeline (1974), and Penitencia Delivery Main (1974). The District also built the Rinconada Water Treatment Plant (WTP) on the west side of the valley in 1967, the Vasona Pump Station in 1971, also on the west side, and the Penitencia WTP in 1974

on the northeast side of the valley. With the importation of water from outside sources, the District became the Santa Clara Valley Water District (Valley Water; known at the time as "the District") in the 1970s (JRP 2023).

During the latter part of the twentieth century, continued demands on Valley Water's system required additional infrastructure. Later facilities built in the 1980s and 1990s include the Cross Valley Pipeline (1980/1985), Calero Pipeline (1990), Snell Pipeline (1987/1988), Graystone Pipeline (1989), Santa Teresa WTP (1989), Mountain View Distributary (1990), and Milpitas Pipeline (1993). Another major development during this period was the long-awaited completion of the San Felipe Project in 1987 that brought water from San Luis Reservoir into Valley Water's system (JRP 2023).

In 1968, Valley Water merged with the Santa Clara County Flood Control District, forming one agency to manage the water supply and flood programs for most of the county. In 1987, Valley Water also acquired the 34,900-acre Gavilan Water Conservation District (GWCD). The GWCD included the southernmost portion of the Santa Clara Valley from Morgan Hill south to the county line. The GWCD formed to address the problem of groundwater overdraft and to augment water supplies. To achieve these goals, GWCD built the Chesbro Dam in 1956 and Uvas Dam and Uvas-Llagas Pipeline in 1957, which were constructed to regulate the release of water from the respective reservoir to downstream groundwater recharge areas on Llagas Creek and Uvas Creek (JRP 2023). These structures became part of the expanded Valley Water system.

To further the efficient use of water, Valley Water also became involved in recycled water projects. One such project – the South County Recycled Water Project (SCRWP) – began in 1977, when Valley Water, the City of Gilroy, and GWCD began a partnership to construct and operate a recycled water system consisting of 8 miles of 12-inch-diameter pipeline extending from the South County Regional Wastewater Authority (SCRWA) water treatment plant southeast of Gilroy to mostly agricultural customers along Hecker Pass Road west of Gilroy. The system, completed in 1978, experienced operational and water quality problems from the outset and only operated intermittently over the next 20 years. In an effort to fix the system, the SCRWP reorganized in 1999 with the SCRWA serving as supplier, Valley Water as wholesaler, and the City of Gilroy as retailer. Together they form a plan to improve and expand the system. This first phase of the project, completed in 2003, rehabilitated the existing SCRWP pipeline with new valves, realigned a portion of the pipeline, and constructed new pipelines, a new pump station, and a new closed tank reservoir. Continued expansions of the treatment plant and the delivery system occurred with new pipelines constructed in 2011, 2014, and 2021 to provide recycled water for various users in Gilroy and vicinity. In addition to its partnership in the South County, Valley Water has partnered with other entities on recycled water projects providing technical and financial support including the City of San Jose in 1994, City of Sunnyvale in 1997, and the City of Palo Alto in 2019 (JRP 2023).

Program Pipelines

Of the program pipelines, 19 pipelines were constructed in 1979 or before. The structures were built between 1953 and 1978, with 15 built in the 1960s. These program pipelines and their years of construction are provided in Table 3.6-1.

Table 3.6-1 Program Pipelines Evaluated for Historic Significance

Pipeline	Year Constructed
Alamitos Pipeline	1964
Almaden Valley Pipeline	1966
Bayview Golf Club Turnout	1965
Campbell Distributary	1967
Central Pipeline	1965
East Evergreen Pipeline	1974
Ed Levin County Park Turnout	1966
Guadalupe Water System (Kooser Percolation Pipeline)	1961
Helmsley/Capitol Percolation Pipeline	1964
Overfelt Garden Percolation Distribution System	1976
Page Distribution System	1966
Rinconada Force Main	1967
Santa Clara Distributary	1967
SBA Flowmeter/Dumbarton Quarry Surface Water Turnout	1963
South County Recycled Water Pipeline	1978
Stevens Creek Pipeline	1953/1967
Sunnyvale Distributary	1970
Uvas-Llagas Transfer Pipeline	1957
West Pipeline	1967

Source: JRP 2023

3.6.3 Regulatory Setting

Federal Regulations, Policies and Standards

National Historic Preservation Act of 1966, as Amended in 1980 and 1992

The NHPA (Title 54 U.S. Code [USC] Section 300101 et seq.) established federal policy on historic preservation at a time when post–World War II infrastructure development and urban

renewal projects were rapidly destroying archaeological sites and historic buildings throughout the nation. The NHPA established the National Historic Landmarks designation, the State Historic Preservation Offices (SHPOs), the NRHP, and the Advisory Council on Historic Preservation 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 Advisory Council on Historic Preservation 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 NRHP.

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 (36 CFR 800):

1. Identify and evaluate historic properties in consultation with the SHPO and interested parties;
2. Assess the effects of the undertaking on properties that are eligible for inclusion in the NRHP;
3. Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation; and
4. Proceed with the project according to the conditions of the agreement

Antiquities Act of 1906
The Antiquities Act (54 USC 320301–320303) provides for fines or imprisonment of any person convicted of appropriating, excavating, injuring, or destroying any historic or prehistoric ruin or monument or other object of antiquity that falls under the jurisdiction of the federal government.

The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation
These standards, effective as of 1983, provide technical advice for archaeological and historic preservation practices. Their purposes are (1) to organize the information gathered about preservation activities; (2) to describe results to be achieved by federal agencies, states, and others when planning for the identification, evaluation, registration, and treatment of historic properties; and (3) to integrate the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's culture heritage (48 Federal Register 44716).

The Secretary of the Interior's Standards for Rehabilitation
These standards were established by the Secretary of the Interior in 1986 as a way to homogenize rehabilitation efforts of nationally significant historic properties and buildings. These standards pertain to actions involved in returning a property to a state of utility through repair or alteration. This allows for the preservation of historic and cultural values of the property, while giving it an efficient contemporary use (36 CFR 67).

The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, 1995

The Standards for the Treatment of Historic Properties are a compilation of 34 guidelines to promote the responsible preservation of U.S. historic cultural resources. The standards specifically address preservation, rehabilitation, restoration, and reconstruction of historic materials. The standards are not intended to be the sole basis for decision-making in regard to whether a historic property should be saved, but rather are intended to provide consistency in conservation and restoration practices (36 CFR 68).

State Regulations, Policies and Standards

CEQA Statute and Guidelines

CEQA and the CEQA Guidelines include procedures for identifying, analyzing, and disclosing potential adverse impacts to cultural resources. For archaeological sites, the CEQA Guidelines [Section 15064.5(c)(1)] require that the lead agency first determine whether the site is a "historical resource" as defined in Section 15064.5(a) (see below definition). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource, as described below [CEQA Guidelines Section 15064.5(c)(2)]. If the archaeological site does not qualify as a historical resource but does qualify as a "unique archaeological resource," then the archaeological site is treated in accordance with Public Resources Code Section 21083.2, which places certain limits on permissible mitigation measures [CEQA Guidelines Section 15064.5(c)(3)]. In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.

The CEQA Guidelines [Section 15064.5(a)] define a "historical resource" as including the following:

- A resource listed in, or eligible for listing in, the CRHR;
- A resource listed in a local register of historical resources (as defined at PRC Section 5020.1(k)];
- A resource identified as significant in a historical resources survey meeting the requirements of PRC Section 5024.1(g); or
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. (Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR.)

A project that causes a "substantial adverse change" in the significance of a historical resource may have a significant effect on the environment [CEQA Guidelines Section 15064.5(b)]. The CEQA Guidelines [Section 15064.5(b)(1)] define "substantial adverse change" as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings

such that the significance of a historical resource would be materially impaired." Generally, the significance of a historical resource is "materially impaired" when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in or eligibility for the CRHR, or its inclusion in a local register of historical resources [CEQA Guidelines Section 15064.5(b)(2)].

Mitigation measures are discussed in CEQA Guidelines Section 15126.4. Generally, by following the Secretary of the Interior's Standards for the Treatment of Historic Properties or the Secretary of the Interior's Standards for Rehabilitation, impacts can be considered as mitigated to a less-than significant level [CEQA Guidelines Section 15064.5(b)(3)]. For archaeological resources, the CEQA Guidelines [Section 15126.4(b)(3)] provide that public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The CEQA Guidelines also require consideration of preservation in place as the preferred manner of mitigation. Mitigation by data recovery is recommended only if preservation is not feasible.

PRC Section 5024.1: California Register of Historical Resources
The CRHR includes resources that are listed in or formally determined eligible for listing in the NRHP, as well as some designated California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR.

Health and Safety Code (HSC) Section 7050.5: Removal of Human Remains
HSC sections 7050.5(b) and 7050.5(c) pertain to the discovery of human remains in a location outside a dedicated cemetery. The HSC requires that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there must be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. If the County Coroner determines, or has reason to believe, the remains to be those of a Native American, the Coroner must contact the NAHC by telephone within 24 hours. In addition, any person who mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor.

Pacheco State Park General Plan
The General Plan for Pacheco State Park identifies the long-term vision and goals for the park and provides guidelines for protecting park resources (California Department of Parks and Recreation 2006). The General Plan does not include goals or policies applicable to noise.

Local Regulations, Policies and Standards

The goals of regional and local policies for cultural resources are analogous to those mandated by the NHPA and CEQA. Applicable local policies are summarized below.

Santa Clara County General Plan, Policies C-RC 49 to 56

As first introduced in Section 3.2.2, the Resource Conservation Element of the Santa Clara County General Plan (1994) includes the following policies relevant to cultural resources:

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 51 Inventories of heritage resources should be maintained as the basis for local decision making regarding such resources.

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.

C-RC 53 Cities should balance plans for urban redevelopment with the objectives of heritage resource preservation in such cases where potential conflicting interest may arise. Care should be taken to integrate heritage resources with new development wherever possible.

C-RC 54 Heritage resources should be restored, enhanced, and commemorated as appropriate to the value and significance of the resource.

C-RC 55 Public awareness and appreciation of existing heritage resources and their significance should be enhanced through community organizations, neighborhood associations, the educational system, and governmental programs.

C-RC 56 Heritage resource acquisition, preservation, restoration, and interpretation projects eligible for funding with County Parks Charter Funds are identified in the "Santa Clara County Heritage Resources Inventory" adopted by the Board of Supervisors.

General Plans of Incorporated Cities within Santa Clara County

The program area includes pipeline systems that traverse various incorporated towns and cities in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to cultural resources:

- City of Campbell (City of Campbell 2023)
- City of Cupertino(City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas(City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View(City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2014)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The cultural resource policies and guidelines in these general plans commonly encourage the conservation of existing historical resources and cultural integrity of development. Cultural preservation remains a strong aspect of the goals and policies of these local general plans.

San Benito County

San Benito County General Plan

A small portion (approximately 4.3 miles) of the Santa Clara Conduit is in the northeast portion of unincorporated San Benito County and would be subject to the policies of the Natural and Cultural Resources Element of the San Benito County General Plan. The Natural and Cultural Resources Element is intended to ensure that facilities and services meet the needs of all residents and businesses. The goals and policies focus on providing goals, policies, and programs related to the management and conservation of scenic resources in San Benito County. The following policies would be relevant to the PMP activities in San Benito County (San Benito County 2015):

Section 8: Natural and Cultural Resources Element

NCR-7	To protect, preserve, and enhance the unique cultural and historic resources in the county.
NCR-7.4	Integrate Architectural Styles. The County shall protect existing historic structures by requiring nearby new development to use architectural styles that complement the historic structures and by striving to ensure roadway improvements enhance and do not detract from nearby historic resources.
NCR-7.9	Tribal Consultation. The County shall consult with Native American tribes regarding proposed development projects and land use policy changes

consistent with the State's Local and Tribal Intergovernmental Consultation requirements.

NCR-7.12 Archaeological Artifacts. The County shall require an archaeological report prior to the issuance of any project permit or approval in areas determined to contain significant historic or prehistoric archaeological artifacts and when the development of the project may result in the disturbance of the site. The report shall be written by a qualified cultural resource specialist and shall include information as set forth in the county's archaeological report guidelines available at the County Planning Department.

Merced County

The Merced County General Plan includes goals and policies for the protection of cultural resources in its Recreation and Cultural Resources Element (Merced County Board of Supervisors 2013). The following policies would be relevant to the PMP in Merced County:

RCR-2.2 Historical Area Preservation. Support the preservation of historical structures and areas, particularly those listed on the National Registrar of Historic Places and California Registrar of Historic Places.

RCR-2.5 Human Remains Discovery. Require that, in the event of the discovery of human remains on any project construction site, all work in the vicinity of the find will cease and the County Coroner and Native American Heritage Commission will be notified.

3.6.4 Impact Assessment Methodology

Archaeological Resources

In an effort to streamline future ground disturbing projects that are anticipated to require program-related maintenance in the next five (5) years, a records search was conducted in 2023 for materials on file with the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University. The records search study area covered the alignments for the Pacheco Conduit/Pacheco Tunnel, Santa Clara Conduit/Santa Clara Tunnel, Almaden Valley Pipeline, Snell Pipeline, West Pipeline, and Alamitos Pipeline and a 0.25-mile study radius around each alignment. This accounts for approximately 44 percent of the total pipeline miles covered by the PMP, however, the results are not used as a representation of the program area as a whole and are specific to the identified pipelines. These records searches identified a total of 554 studies and 102 cultural resources. In addition to the NWIC database, the following sources were reviewed:

- California Inventory of Historic Resources (1976 and updates)
- Office of Historic Preservation's Historic Property Data File, which includes:
  - National Register
  - California Register
  - California State Historical Landmarks (1996 and updates)

  - California State Points of Historical Interest (1992 and updates)
  - Office of Historic Preservation Archaeological Determinations of Eligibility
- General Land Office, Historical Maps, and Rancho Plat Maps (cursory review)
- California Department of Transportation Bridge Survey (cursory review)

Details regarding the previous studies and previously recorded resources for these pipelines are provided in the Cultural Resources Study (Appendix H). As ground disturbing project activities are required on other pipelines, Valley Water is required conduct additional records searches prior to project construction.

Formal consultation with the Native American community was conducted in September 2023 for the entire Valley Water program area as required by Valley Water's obligations under CEQA (e.g., AB 52). In addition, Valley Water contacted the NAHC for a search of their Sacred Lands File and a list of Native American representatives across the entire program area requesting input regarding potential areas of concern. In total, 37 tribes were contacted, none requested further consultation. Additional information regarding outreach efforts is provided in Chapter 1 as well as in the Cultural Resources Study (Appendix H). Potential impacts of the PMP update on Tribal Cultural Resources is evaluated in Section 3.7.

Archaeological Sensitivity for Buried Sites

A buried site model was developed to determine the potential for buried sites to occur throughout the entire study area and included all program pipelines. NRCS Soil Survey maps and geographic information system (GIS) datasets were used to estimate the age and extent of different landforms based on their surface slope, degree of soil development, landscape position, cross-cutting relationships, and in some cases radiocarbon evidence. Age differences between surface landforms were used to estimate the relative potential (i.e., probability) for buried sites to occur in different program area segments. The basis for the buried site model as well as the parameters and statistical methods applied area detailed in the Cultural Resources Study (Appendix H).

Historic Resources

As further detailed in the Historic Resources Report (Appendix I), the NRHP/CRHR eligibility for all program pipelines 45 years or older (e.g., built in 1979 or earlier) was evaluated. Those pipelines are included in Table 3.6-1. A comprehensive literature review of the following materials was conducted:

- Valley Water historical documents and as-built drawings to determine the dates of construction of program pipelines
- NWIC record search results
- California Historical Resources list curated by the California Office of Historic Preservation (OHP), which includes resources listed in the NRHP and CRHR
- OHP Built Environment Resource Directory
- A list of all resourced reviewed for eligibility to the NRHP and the California Historical Landmarks programs through federal and state environmental

compliance laws, and resources nominated under federal and state registration programs

A field survey was also conducted in 2023 to visually assess the materials, design, visible alterations, and setting for certain program pipeline and appurtenances.

Program pipelines 45 years or older were then evaluated against the criteria for listing properties in the CRHR set forth in the CEQA Guidelines to determine their historic significance. The CRHR criteria are as follows:[1]

- Criterion 1: Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
- Criterion 2: Associated with the lives of persons important to local, California or national history;
- Criterion 3: Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values;
- Criterion 4: Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

These pipelines were also reviewed against the NRHP eligibility criteria for listing properties (36 CFR Part 60). Eligibility for listing in the NRHP is determined by meeting at least one of the four following criteria at the local, State, or federal level:

- Criterion A: association with events or trends significant in the broad patterns of our history;
- Criterion B: association with the lives of significant individuals;
- Criterion C: a property that embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, or that possesses high artistic values;
- Criterion D: has yielded or is likely to yield information important to history or prehistory.

After conducting research to establish a historic context and histories of the 19 individual pipelines and performing fieldwork, this study concludes that none of the pipelines inclusive of their appurtenant structures are eligible for the NRHP or CRHR. Additional detail regarding the specific criterion ranking is included in Section 5.3 of the Historic Resources Report (Appendix I).

[1] Public Resources Code [PRC] Division 13, Sections 21000-21178; CEQA Guidelines, Section 15064.5(a)(2)-(4) provide the criteria from Section 5024.1 of the California Public Resources Code, and the CRHR is defined in the California Code of Regulations Title 14, Chapter 11.5.

Significance Criteria

The impacts of the PMP related to cultural resources would be considered significant if they exceeded the following standards of significance:

- **Impact CUL-1:** Result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines.
- **Impact CUL-2:** Result in a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines or disturb any human remains, including those interred outside of dedicated cemeteries.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Although Valley Water's BMP Handbook contains a cultural resource-related BMP (BMP CU-1), this standard BMP is superseded by mitigation measures included in the analysis below.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the PMP to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to cultural resources are provided in Table 3.6-2. AMMs are applied to reduce erosion around watercourses, thus reducing likelihood of exposing cultural resources.

Table 3.6-2 Cultural Resource-Related AMMs

AMM No.	AMM Requirements
AMM HYD-4	**Consider Water Release Volume Reduction Options.** Water release volume reduction options (such as performing maintenance activities with partially full pipelines, employing sectioning valves, and/or opportunities for reuse of water) will be considered prior to draining the pipeline.
AMM HYD-5	**Flow Diversion Measure Implementation.** Where practicable, flows will be diverted around actively eroding areas, or areas that may erode when subjected to release flows to avoid the following: damage to Valley Water property or adjacent property; threats to public safety; and in-channel sedimentation and/or water quality concerns or other beneficial uses, such as riparian habitat or recreation. Flow diversion methods may include the use of flexible piping and/or placement of gravel bags to alter flow direction, or equivalent measures. The new flow path and release point will be monitored for signs of erosion.
AMM HYD-6	**Erosion Control and Dewatering Design.** To protect exposed soil and vegetated surfaces from erosion, existing adequate hard infrastructure (e.g., concrete, quick-setting concrete, or riprap spillways and bubblers/dissipators) or temporary dewatering measures (e.g., visqueen spillways) will be used for all water releases. Visqueen spillway design can include a wattle or gravel bag perimeter with a temporary hose that terminates into a geotextile bag to

AMM No.	AMM Requirements
	dissipate flows and filter out sediments, solids, or fish that may be in a pipeline. Water releases will not occur directly over soil, which may erode into receiving watercourses or directly to receiving watercourse in such a way that erosion can occur at the release point.
AMM HYD-9	**Erosion Control and Monitoring.** The release location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, releases will be terminated until appropriate erosion control BMPs are installed. Monitoring will be conducted just before the start of the release and regularly (e.g., every hour, every 4 hours, daily) during the release. The monitoring frequency will depend on site conditions and the nature of the release.
AMM HYD-10	**Inspection and Restoration of Eroded Areas.** An environmental monitor will walk along each release drainage 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures shall be taken to correct the erosion, if necessary. Correction measures may include installation of soil stabilization measures (e.g., wattles), hydroseeding, and/or recontouring the land to its previous state.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program. Therefore, impact analyses were conducted assuming application of these VHP conditions in VHP-covered program areas. Similar to program-specific AMMs, these VHP conditions are applied to reduce erosion around watercourses, thus reducing likelihood of exposing cultural resources. The VHP conditions applicable to cultural resources are provided in Table 3.6-4.

Table 3.6-3 VHP Conditions Applicable to Cultural Resources

Condition No.	VHP Condition
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality
Condition 4	Avoidance and Minimization for In-Stream Projects
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance

Note: VHP Conditions 3, 4, and 5 require compliance with a suite of avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided Table 2.7-4 in Chapter 2.

3.6.5 Impact Analysis

Impact CUL-1: Result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines (less than significant with mitigation incorporated)

As described in Section 3.6.4, the 19 pipelines and appurtenances age 45 years or older were evaluated for their historic significance. None of these program pipelines were determined to

have important associations with significant historic events, patterns, or trends of development (NRHP Criterion A/CRHR Criterion 1); identified as significant for an association with the lives of persons important to history (NRHP Criterion B/CRHR Criterion 2); determined to be significant as important examples of a type, period, or method of construction, as the work of a master, or for possessing high artistic values (NRHP Criterion C/CRHR Criterion 3); or identified as a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence (NRHP Criterion D/CRHR Criterion 4) (JRP 2023). Therefore, program tasks carried out on these pipelines and appurtenances would not result in an impact to historic resources.

However, as discussed in Section 3.11, Noise, the implementation of various program tasks has the potential to generate groundborne vibration. These tasks would include:

- Setup, staging, and access
- Excavation, construction, and other ground disturbance

Equipment used during these activities could include various heavy trucks (e.g., flatbed delivery trucks, water trucks, dump trucks), backhoes, loaders, dozers, cranes, excavators, jackhammers, vibratory rollers, and shoring equipment, including the use of pile drivers on rare occasion, all of which would generate varying levels of groundborne vibration.

Program pipelines rights-of-way traverse a wide variety of land uses and program tasks may be carried out in close proximity to potentially historic structures such as buildings or bridges. As analyzed under Impact NOI-2, the use of heavy construction equipment could generate groundborne vibrations at levels that would damage nearby structures, including known and unknown historic resources. The impact would be **significant**.

Significance Determination
Significant

Mitigation
To reduce impacts of groundborne vibration under Impact CUL-1, Valley Water would implement MM NOI-3 below.

> **MM NOI-3: Groundborne Vibration-Control Plan.** If use of any of the following vibration-generating equipment is required within the following minimum distances from any buildings or structures, Valley Water or its contractors will implement vibration monitoring in compliance with the requirements below.

Minimum Distances from Vibration-Generating Equipment to Structures

Equipment	Minimum Distance to Structure
Jackhammer	15 feet
Loaded truck	25 feet
Large bulldozer	30 feet

Equipment	Minimum Distance to Structure
Vibratory roller	50 feet
Pile driver (impact)	100 feet

Before beginning construction, a written plan will be submitted by the Valley Water project engineer r to Valley Water's Environmental Health and Safety Unit to obtain approval of the Noise /Vibration Monitoring Plan. The Noise /Vibration Monitoring Plan will be implemented by the project engineer, detailing the procedures for noise monitoring which will address items required in MM NOI-1 and/or MM NOI-2 as applicable from Section 3.11, Noise, of this EIR and the Vibration Monitoring requirements listed below:

- The name of the firm providing the vibration monitoring services
- A description of the instrumentation and equipment to be used
- Methods for mounting the instrumentation to the ground
- The data collection analysis procedure
- The number of vibration monitors to be used at each structure/building
- The means and methods of providing warning when particle velocity will be equal to or exceed specified limits
- The name(s) of the responsible person/vibration-monitoring personnel
- A contingency plan for alternative construction methods (e.g., use of smaller construction equipment or vehicles or hand tools) when PPV equals to or exceeds specified limits

After the vibration monitoring plan is approved by the Valley Water Environmental Health and Safety Unit and Project Engineer assigned to the construction project, the vibration monitoring equipment will be furnished and installed. The first vibration monitoring before the start of construction will establish the baseline for all subsequent recordings. Equipment will be in place and functioning properly before use of the above vibration-generating equipment within the minimum distances to structures identified. Because this PEIR evaluates impacts programmatically and all program circumstances are not foreseeable, this analysis conservatively used the Caltrans threshold for extremely fragile historic buildings (0.08 in/sec peak particle velocity (PPV)) for continuous/frequent intermittent sources as the significance threshold. More information on PPV is included in Section 3.11.1 (Noise). The equipment will be set up in a manner so that an immediate warning is given when the resultant PPV equal to or exceeding 0.08 in/sec is produced. The warning emitted by the vibration monitoring equipment will be transmitted instantaneously to the responsible person who has been designated by Valley Water or its contractor, by means of warning lights, audible sounds, or electronic transmission. The responsible person/vibration-monitoring personnel will have the authority to stop the work causing the vibration.

If the PPV reading on monitoring equipment equals to or exceeds 0.08 in/sec, work will cease immediately, and Valley Water or its contractor will implement the approved contingency plan to reduce and maintain the monitoring equipment reading below 0.08 in/sec before resuming work.

Significance after Mitigation

To reduce the potential for groundborne vibration to damage historic structures and buildings, Valley Water would implement MM NOI-3, which would require Valley Water or its contractor to monitor vibration levels at buildings and structures at specified distances within which risk of damage potential would exceed the 0.08 in/sec PPV threshold. MM NOI-3 also would require that work cease in the event vibration levels at nearby buildings or structures would exceed 0.08 in/sec PPV, and that a contingency construction plan would be implemented that would maintain vibration levels to below the damage potential threshold. The impact would be **less than significant with mitigation incorporated**.

Impact CUL-2: Result in a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines or disturb any human remains, including those interred outside of dedicated cemeteries (less than significant)

The archaeological sensitivity of the study area was determined based on the buried site potential modeling results. Due to the location of most of program pipelines in the valley bottom, lowest sensitivity areas were the most widespread, representing 74.5 percent of the study area. Low sensitivity comprised 11.2 percent of the study area, while moderate, high, and highest sensitivity areas collectively accounted for 14.3 percent of the study area. The breakdown of buried site potential in relation to each program pipeline is detailed in Table 3.6-3.

Table 3.6-4 Extent of Buried Site Potential in Relation to Each Pipeline

Pipeline	Acreage of Line with 5-meter (16.4 feet) Buffer	Total Acreage of Line with 5-meter (16.4 feet) Buffer	Sensitivity				
			Lowest (%)	Low (%)	Moderate (%)	High (%)	Highest (%)
Alamitos Pipeline	0.19	0.72	26.0	-	-	-	-
	0.53	0.72	-	-	-	-	74.0
Almaden Valley Pipeline	0.84	46.78	-	-	1.8	-	-
	3.89	46.78	-	8.3	-	-	-
	6.58	46.78	-	-	-	14.1	-
	7.00	46.78	-	-	-	-	15.0
	28.46	46.78	60.8	-	-	-	-
Anderson Force Main	0.34	3.22	-	10.7	-	-	-

Pipeline	Acreage of Line with 5-meter (16.4 feet) Buffer	Total Acreage of Line with 5-meter (16.4 feet) Buffer	Sensitivity				
			Lowest (%)	Low (%)	Moderate (%)	High (%)	Highest (%)
	2.88	3.22	89.3	-	-	-	-
Bayview Golf Club Turnout	0.11	0.11	100.0	-	-	-	-
Calero Pipeline	10.89	10.89	100.0	-	-	-	-
Campbell Distributary	0.76	8.26	-	9.2	-	-	-
	1.25	8.26	-	-	-	15.1	-
	6.25	8.26	75.7	-	-	-	-
Central Pipeline	0.98	50.24	-	-	-	-	2.0
	1.10	50.24	-	-	2.2	-	-
	5.58	50.24	-	-	-	11.1	-
	14.79	50.24	-	29.4	-	-	-
	27.79	50.24	55.3	-	-	-	-
Church Avenue Percolation Pipeline	0.09	0.31	28.0	-	-	-	-
	0.22	0.31	-	72.0	-	-	-
Coyote Discharge Line	0.39	1.92	-	20.5	-	-	-
	1.53	1.92	79.5	-	-	-	-
Coyote-Madrone Half Road Pipeline	4.81	4.81	100.0	-	-	-	-
Cross Valley Pipeline	0.69	32.89	-	-	2.1	-	-
	1.78	32.89	-	-	-	5.4	-
	2.61	32.89	-	7.9	-	-	-
	27.81	32.89	84.6	-	-	-	-
Cross Valley Pipeline Extension	0.58	5.41	-	-	-	10.7	-
	0.64	5.41	-	-	11.8	-	-
	0.72	5.41	-	-	-	-	13.3
	1.14	5.41	-	21.0	-	-	-
	2.33	5.41	43.2	-	-	-	-
East Evergreen Pipeline	0.63	25.52	-	-	-	-	2.5
	0.82	25.52	-	-	3.2	-	-
	1.87	25.52	-	-	-	7.3	-
	4.49	25.52	-	17.6	-	-	-

Pipeline	Acreage of Line with 5-meter (16.4 feet) Buffer	Total Acreage of Line with 5-meter (16.4 feet) Buffer	Sensitivity				
			Lowest (%)	Low (%)	Moderate (%)	High (%)	Highest (%)
	17.71	25.52	69.4	-	-	-	-
Ed Levin County Park Turnout	0.07	0.07	100.0	-	-	-	-
Guadalupe Percolation Pipeline	0.11	3.40	-	3.1	-	-	-
	0.26	3.40	-	-	-	7.6	-
	0.89	3.40	26.1	-	-	-	-
	2.15	3.40	-	-	-	-	63.2
Guadalupe Water System (Kooser Percolation Pipeline)	1.29	1.29	100.0	-	-	-	-
Helmsley/Capitol Percolation Pipeline	0.29	3.08	-	9.3	-	-	-
	0.37	3.08	-	-	12.0	-	-
	0.57	3.08	18.6	-	-	-	-
	1.85	3.08	-	-	-	60.1	-
Hetch-Hetchy Intertie	0.11	0.73	15.0	-	-	-	-
	0.62	0.73	-	85.0	-	-	-
Los Capitancillos Percolation Pipeline	0.18	2.32	-	-	8.0	-	-
	0.74	2.32	32.1	-	-	-	-
	1.39	2.32	-	-	-	59.9	-
Main Avenue Pipeline	0.71	5.62	-	12.7	-	-	-
	4.91	5.62	87.3	-	-	-	-
McGlincy Pipeline	0.06	0.06	100.0	-	-	-	-
Milpitas Pipeline	0.29	18.43	-	-	1.6	-	-
	7.43	18.43	-	40.3	-	-	-
	10.71	18.43	58.1	-	-	-	-
Mountain View Distributary	4.81	4.81	100.0	-	-	-	-
Overfelt Garden Percolation Distribution System	0.22	2.14	-	-	10.3	-	-
	0.26	2.14	-	-	-	12.1	-
	0.61	2.14	28.7	-	-	-	-
	1.05	2.14	-	49.0	-	-	-
Pacheco Conduit	0.41	31.64	-	1.3	-	-	-

Pipeline	Acreage of Line with 5-meter (16.4 feet) Buffer	Total Acreage of Line with 5-meter (16.4 feet) Buffer	Sensitivity				
			Lowest (%)	Low (%)	Moderate (%)	High (%)	Highest (%)
	0.82	31.64	-	-	2.6	-	-
	5.86	31.64	-	-	-	18.5	-
	6.96	31.64	-	-	-	-	22.0
	17.59	31.64	55.6	-	-	-	-
Pacheco Tunnel	21.31	21.31	100.0	-	-	-	-
Page Distribution System	2.02	2.02	100.0	-	-	-	-
Parallel East Pipeline	0.59	9.33	-	-	-	-	6.3
	0.62	9.33	-	-	6.6	-	-
	1.13	9.33	-	-	-	12.2	-
	1.44	9.33	-	15.5	-	-	-
	5.55	9.33	59.5	-	-	-	-
Penitencia Delivery Main	1.96	1.96	100.0	-	-	-	-
Penitencia Force Main	2.11	2.11	100.0	-	-	-	-
Rinconada Force Main	0.05	5.70	-	-	-	-	0.9
	0.66	5.70	-	11.5	-	-	-
	4.99	5.70	87.6	-	-	-	-
San Pedro Percolation Bypass Pipeline	1.89	1.89	100.0	-	-	-	-
San Pedro Percolation Pipeline	1.99	1.99	100.0	-	-	-	-
Santa Clara Conduit	3.12	84.11	-	-	-	-	3.7
	5.53	84.11	-	-	6.6	-	-
	7.32	84.11	-	8.7	-	-	-
	10.78	84.11	-	-	-	12.8	-
	57.36	84.11	68.2	-	-	-	-
Santa Clara Distributary	0.44	16.48	-	-	2.7	-	-
	3.87	16.48	-	23.5	-	-	-
	3.88	16.48	-	-	-	23.6	-
	8.29	16.48	50.3	-	-	-	-
Santa Clara Tunnel	3.84	3.84	100.0	-	-	-	-
Santa Teresa Force Main	0.24	1.10	-	-	-	-	22.0

Pipeline	Acreage of Line with 5-meter (16.4 feet) Buffer	Total Acreage of Line with 5-meter (16.4 feet) Buffer	Sensitivity				
			Lowest (%)	Low (%)	Moderate (%)	High (%)	Highest (%)
	0.86	1.10	78.1	-	-	-	-
Santa Teresa Tunnel	2.48	2.48	100.0	-	-	-	-
Snell Pipeline	1.13	31.39	-	-	3.6	-	-
	1.36	31.39	-	-	-	-	4.3
	2.17	31.39	-	-	-	6.9	-
	5.10	31.39	-	16.3	-	-	-
	21.63	31.39	68.9	-	-	-	-
South Bay Aqueduct Flowmeter/Dumbarton Quarry Surface Water Turnout	0.05	0.05	100.0	-	-	-	-
South County Recycled Water Pipeline	3.84	73.72	-	-	5.2	-	-
	6.18	73.72	-	-	-	-	8.4
	11.06	73.72	-	-	-	15.0	-
	15.44	73.72	-	20.9	-	-	-
	37.20	73.72	50.5	-	-	-	-
Stevens Creek Pipeline	0.00	28.06	-	-	0.0	-	-
	0.66	28.06	-	-	-	-	2.4
	0.77	28.06	-	-	-	2.8	-
	2.34	28.06	-	8.3	-	-	-
	24.28	28.06	86.6	-	-	-	-
Sunnyvale Distributary	0.45	1.90	-	-	-	23.5	-
	1.45	1.90	76.5	-	-	-	-
Uvas-Llagas Transfer Pipeline	0.30	12.70	-	-	2.3	-	-
	0.56	12.70	-	-	-	-	4.4
	0.61	12.70	-	-	-	4.8	-
	1.18	12.70	-	9.3	-	-	-
	10.05	12.70	79.2	-	-	-	-
West Pipeline	0.38	36.32	-	-	1.1	-	-
	0.71	36.32	-	-	-	-	2.0
	1.00	36.32	-	-	-	2.8	-

Pipeline	Acreage of Line with 5-meter (16.4 feet) Buffer	Total Acreage of Line with 5-meter (16.4 feet) Buffer	Sensitivity				
			Lowest (%)	Low (%)	Moderate (%)	High (%)	Highest (%)
	1.45	36.32	-	4.0	-	-	-
	32.78	36.32	90.3	-	-	-	-
Wolfe Road Pipeline	10.20	10.20	100.0	-	-	-	-
Total Acreage and Percent of Sensitivity within Valley Water Pipelines	**613.33 acres**	**-**	**74.5**	**11.2**	**1.8**	**7.1**	**5.4**

Source: Far Western 2024

Implementation of some program tasks could damage buried archaeological resources or disturb human remains during ground-disturbing activities. As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Tasks that involve ground disturbance and have the potential to impact buried archaeological resources or human remains would include:

- Dewatering
- Excavation, construction, and other ground disturbance

Dewatering

Dewatering is the release of water from pipelines through blow-off points, turnouts, or pump-outs into existing waterways or into storm drains. Dewatering occurs prior to maintenance work or prior to refilling a treated water pipeline. Blow-off pipes may protrude from creek banks. Water releases may also occur through pump-outs located in close proximity to waterways or storm drains (within 50 feet). Due to the greater probability of archaeological resources being located within creek banks or near waterways, water releases have the potential to expose sensitive archaeological resources if dewatering resulted in excessive erosion. As discussed in Section 3.1, Hydrology and Water Quality, existing standard water release practices and procedures implemented by Valley Water are designed to reduce erosion potential. These standard practices and procedures include the following:

- Pulsing flow rates (valves are opened and closed to limit the amount of water flowing out) to minimize scouring and effects of rapid water-level increase and decrease.
- Manually controlling flow rates of up to 20 cfs by controlling valves and pump rates. (Flow rates are ramped up slowly, then pulsed to minimize scouring and the effects of rapid water-level changes, and then ramped down.)
- Using underground and aboveground energy dissipaters to reduce the velocity of the released water in certain areas.
- Gradually increasing the release rate to prevent the buildup of water in streams, rivers, or canals and avoid scouring of the channel bed and ground surfaces.

Compliance with VHP conditions (in VHP-covered program areas) and implementation of various program-specific AMMs across the program area would further reduce potential for erosion. AMM HYD-5 would require flows to be diverted around actively eroding areas or areas that are subject to erosion due to release flows. AMM HYD-6 would protect exposed soils and vegetated surfaces by directing releases to existing hard infrastructure or requiring temporary devices such as visqueen spillways. AMM HYD-9 and AMM HYD-10 would require monitoring of the release location and along the drainage to termination to inspect for signs of erosion. However, even with implementation of these AMMs and VHP conditions, the potential for inadvertent discovery of an archaeological resource or buried human remains, although unlikely, cannot be fully eliminated. If program tasks were implemented in a manner that resulted in damage to an archaeological resource or disturbance to human remains, the impact would be **significant**.

Excavation, Construction, and Other Ground Disturbance

Program activities involving excavation and ground disturbance would include repairs to existing water transmission and delivery infrastructure as well as repairs to existing access roads. Because these facilities and roadways already are in place, and some level of disturbance already has occurred because of their initial construction; most of the proposed work is not expected to involve disturbance of previously undisturbed substrate materials, and thus the work would be unlikely to result in disturbance of human remains or adverse effects on buried archaeological resources, even if the surrounding area is modeled as having high or highest sensitivity percentages, as identified in Table 3.6-3. However, if any program activities would require disturbance to previously undisturbed substrate materials (e.g., repairs that would require disturbance outside the original disturbance prism), these activities could damage or destroy buried archaeological resources or disturb human remains. The impact would be **significant**.

Significance Determination

Significant

Mitigation

To reduce the impacts related to archaeological resources and buried human remains, Valley Water would implement Mitigation Measure (MM) CUL-1 and MM CUL-2, as described below.

> **MM CUL-1: Actions to Be Taken Prior to Disturbance or Excavation of Native (Non-Fill) Sediments.** Prior to the initiation of excavation activities that will disturb native soil, a cultural resources specialist will conduct a records search to determine whether known cultural resources are present within the program work area and whether the program work area has been previously studied. The record search will be conducted by a professional archaeologist at the Northwest Information Center of the California Historical Resource Information System, Sonoma State University, Rohnert Park. The record search will document cultural resources with a one-quarter mile radius of the planned excavation boundaries, and will obtain all pertinent cultural resources documents, maps, and records needed to assess the program work area's potential to

contain significant cultural resources. A records search will not be necessary for work along Valley Water facilities for which a records search or cultural resource inventory study has been carried out within the past 5 years.

If the record search results indicate that a survey has not been conducted or was conducted more than 5 years ago, a cultural resources inventory (survey) of the program work area will be conducted. The survey will document whether surface cultural materials (historic-era or precontact) are present within the program work area. The results of the record search and, if needed, cultural resources inventory will be presented in a report to Valley Water along with recommendations on how to proceed.

If during evaluation of a PMP project, using the Preliminary Environmental Review Checklist (Appendix D), it is identified that excavations are to occur at or near known precontact archaeological sites, TCRs, and sites with known Native American burials, a Native American Monitor will be present. If Native American human remains are found during any field investigations, they must be treated with the utmost respect. All provisions of California Health and Safety Code Sections 7054 and 7050.5 and Public Resources Code Sections 5097.9 through 5097.99, as amended per Assembly Bill 2641, must be followed.

If a program activity involves excavation of subsurface sediments in an area classified as highest to moderate potential for buried cultural deposits (as indicated in Table 3.6-3), a Registered Professional Archaeologist (RPA) will be consulted as to the best course of action. This may include preemptive backhoe work or monitoring of excavations to determine the presence or absence of buried sites.

MM CUL-2: Inadvertent Discovery Plan. If an unanticipated archaeological resource is encountered during construction or dewatering, work in the immediate vicinity of the find will cease until all requirements relating to archaeological discoveries (described below) have been satisfied. Any ground-disturbing activities (including dewatering) will be halted within a 100-foot radius. The area will be secure from vandalism or further disturbance; a “no work” zone utilizing appropriate flagging will be created; and construction personnel will notify appropriate Valley Water staff. A RPA will be consulted and will evaluate the find and recommend further management actions.

The RPA will conduct a field assessment to determine if the discovery constitutes a potentially significant archaeological resource that requires further evaluation. The RPA will be familiar with standard thresholds of eligibility for precontact and/or historic-era resources. If the find is deemed potentially significant, it will be covered and/or fenced for protection, and crews will move to a new location so that a more in-depth evaluation and mitigation (if needed) can occur.

The RPA will provide Valley Water with written and digital photographic documentation of all observed materials. They will also discuss site constituents utilizing the guidelines for evaluating archaeological resources for inclusion on the

National and/or California Register to make recommendations concerning a site's eligibility. Based on the assessment, Valley Water will identify the appropriate CEQA and Section 106 cultural resources compliance procedure to be implemented.

If the find does not appear to meet the criteria of the National or California Register, construction may continue and, depending on the find, may require monitoring by the RPA. The authorized maintenance work may resume at the discovery site only after Valley Water Construction Manager has retained an RPA to monitor the site during continued construction and the Environmental Services Unit Manager has provided authorization to the Valley Water Construction Manager to continue work.

If the find appears significant, the RPA will determine if adverse impacts to the resources can be avoided. When avoidance is not feasible (e.g., maintenance activities cannot be deferred), Valley Water will develop an Action Plan (data-recovery plan). It will be prepared in accordance with the current professional standards and state and federal guidelines for reporting the results of the work and will describe the services of a Native American Monitor and a proposal for curation of cultural materials recovered from a non-grave context. The recovery effort will be detailed in a report prepared by the RPA in accordance with current archaeological standards.

In the event of the discovery of human remains (or the find consists of bones suspected to be human), the field crew supervisor will take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent. A Valley Water representative will immediately notify the appropriate County Coroner and provide information that identifies the remains as Native American. If the remains are determined to be Native American, the Coroner will contact the NAHC within 24 hours of being notified of the remains. The NAHC then designates and notifies within 24 hours a Most Likely Descendant (MLD). The MLD has 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and any associated artifacts. Human remains will be preserved in situ if continuation of the maintenance work, as determined by the RPA and MLD, will not cause further damage to the remains (this is the preferred alternative). The remains and any associated artifacts will be documented and the discovery location carefully backfilled (with protective geo-fabric if desirable) and recorded in Valley Water project files, Environmental Services Manager protected cultural resources files, and Valley Water library protected files.

If human remains, or associated burial items are exposed and cannot be protected from further damage, they will be exhumed by the RPA at the discretion of the MLD and reburied with the concurrence of the MLD in a place mutually agreed upon by all parties.

Significance after Mitigation

Implementation of MM CUL-1 would require a site-specific review of known archaeological resources for any work areas outside previously disturbed areas prior to ground disturbance and consultation with an RPA to establish program task-specific protection measures, if warranted. MM CUL-1 also requires formal consultation with the Native American community to identify potential areas of concern or burial sites. In the unlikely event inadvertent discovery of archaeological resources or human remains occur during ground-disturbing activities, including dewatering, MM CUL-2 would ensure appropriate evaluation of the resource or remains occurs and protection or preservation measures are implemented. The impact would be **less than significant with mitigation incorporated**.

3.7 Tribal Cultural Resources

This section provides an overview of tribal cultural resources (TCRs) in the program area; applicable regulations, policies, and standards; and a discussion of the program's potential impacts to TCRs. Information in this section was developed from the *Cultural Resources Study* (Far Western 2024). Due to the sensitive nature of information included in the *Cultural Resources Study*, it is provided in redacted format in Appendix H.

3.7.1 Definitions

A TCR is defined in PRC Section 21074 as a site, feature, place, or 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 (CRHR), or in a local register of historical resources as defined in PRC Section 5020.1(k); or
- a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, lead agencies must consider the significance of the resource to a California Native American tribe.

TCRs may be found eligible for listing in the CRHR and/or the NRHP "because of [their] association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1998). Examples of locations possessing such significance include:

- A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where the Native American community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

3.7.2 Environmental Setting

The study area used to assess the program's impacts on tribal cultural resources includes all program pipeline alignments listed in Chapter 2, Project Description, as well as a 0.25-mile buffer surrounding the pipeline alignments. This buffer would conservatively encompass all areas that may be directly or indirectly disturbed by program implementation.

The discussion of the cultural and ethnographic contexts in Section 3.6 serves as the current baseline conditions, which is used to evaluate the program's impacts on TCRs in the study area.

3.7.3 Regulatory Setting

This section summarizes the state laws pertinent to evaluation of the program's impacts to TCRs. The federal and state laws, regulations, policies, and plans pertinent to evaluation of the program's impacts to cultural resources, as described in Section 3.6, also apply to TCRs. In addition, the regulations discussed below, including AB 52, would apply.

Federal Regulations, Policies and Standards

National Historic Preservation Act Section 106

Valley Water operates and maintains federally owned pipelines that are subject to Section 106 of the NHPA of 1966, as amended. The NHPA requires that federal agencies account for the effects of their undertakings on properties eligible for listing in the National Register of Historic Places (NRHP). Under Title 36 CFR Section 800, federal agency officials must make a "reasonable and good faith effort" to identify historic properties as well as the nature and extent of potential impacts on historic properties. An undertaking may have an adverse effect on historic properties when it directly or indirectly alters any of the characteristics of a historic property that qualify it for inclusion in the NRHP through the diminishing of location, design, setting, materials, workmanship, feeling, and/or association.

To determine whether an undertaking could affect National Register-eligible properties, cultural resources (including archaeological and architectural properties) must be inventoried and evaluated for listing in the NRHP. Although compliance with Section 106 is the responsibility of the lead federal agency, others may undertake the work necessary to comply with Section 106. The Section 106 process entails four primary steps, listed below:

1. Initiation of consultation with consulting parties (36 CFR 800.3).
2. Identification and evaluation of historic properties within the Area of Potential Effects (APE; 36 CFR 800.4).
3. Assessment of adverse effects on historic properties within the APE (36 CFR 800.5).
    - If there are historic properties that will be affected, consult with the California SHPO regarding adverse effects on historic properties.
    - If there are no historic properties that will be affected, implementation of the project in accordance with the findings of no adverse effect shall proceed (36 CFR 36 800.5[d][1]).

Resolution of adverse effects and proceeds in accordance with the Memorandum of Agreement, if determined appropriate (36 CFR 800.6).

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act (Title 42 U.S. Code [USC] 1996) established federal policy to protect and preserve the inherent rights of freedom for American Indians, Eskimos,

Aleuts, and Native Hawaiians to believe, express, and exercise their traditional religions on federal and tribal trust lands. Among these rights are access to sites, use and possession of sacred objects, and the freedom to worship through traditional ceremonies and rites.

Native American Graves Protection and Repatriation Act of 1990
The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001 et seq.) was intended to ensure the protection and rightful disposition of Native American cultural items and burials located on federal or tribal trust lands, and in the possession or control of the federal government. NAGPRA requires that an inventory of Native American human remains and funerary objects must be compiled by federal funded agencies and all museums and educational institutions receiving federal funds. Additionally, NAGPRA makes it illegal to traffic Native American remains and cultural items without the right of possession, whether or not they derive from federal or Native American lands.

Also, all Indian tribes and representatives identified by the Native American Heritage Commission (NAHC) must be consulted whenever archaeological investigations encounter, or are expected to encounter, Native American cultural items or when such items are unexpectedly discovered on federal or tribal lands. Excavation or removal of any such items also must be done under procedures required by the Archaeological Resources Protection Act.

State Regulations, Policies and Standards

PRC Sections 5097.91 through 5097.98: California Native American Heritage Commission
The California NAHC identifies and catalogs places of special religious or social significance to Native Americans and known graves and cemeteries of Native Americans on private lands. Section 5097 was amended in 1987 (5097.9) to require consultation with the California NAHC whenever Native American graves are found. When the NAHC is notified of human remains, it shall immediately notify those persons it believes to be the most likely descendants. Section 5097.98 (b)(1) states:

> *Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.*

Section 5097.98(b)(1) also states possible preferences the most likely descendants may have for said treatment, including preservation in place, nondestructive removal and analysis, relinquishment to the most likely descendants, or other appropriate treatment. Conferral or discussion between the most likely descendant and landowner is described in Section 5097.98 (c)(2) as "meaningful and timely discussion and careful consideration of the views of each

party, in a manner that is cognizant of all parties' cultural values, and where feasible, seeking agreement."

Tribal Cultural Resource: The passage of AB 52 created a new category of resource under CEQA called a "tribal cultural resource." The statute identifies a TCR as a separate and distinct category of resource, separate from a historical resource. A tribal cultural resource is defined in PRC Section 21074 as a site, feature, place, or 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 CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k); or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, lead agencies must consider the significance of the resource to a California Native American tribe.

Tribal cultural resources may be found eligible for listing in the CRHR and/or the NRHP "because of [their] association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1998). Examples of properties possessing such significance include:

- A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- A location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- A location where the Native American community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

California Public Resources Code Section 21080.3.1 (commonly referred to as "AB 52")
AB 52 amended CEQA to address California Native American tribal concerns regarding how cultural resources of importance to tribes are treated under CEQA. With the addition of AB 52, CEQA now specifies that a project that may cause a substantial adverse change in the significance of a "tribal cultural resource" [as defined in PRC 21074(a)] is a project that may have a significant effect on the environment. According to the AB 52, tribes may have expertise in tribal history and "tribal knowledge about land and TCRs at issue should be included in environmental assessments for projects that may have a significant impact on those resources."

The AB 52 process entails the following:

- The CEQA lead agency must begin consultation with a California Native American tribe(s) that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe(s) requested to the lead agency, in writing, to be

informed by the lead agency of proposed projects in that geographic area and the tribe(s) requests consultation.

- A proposed Negative Declaration, Mitigated Negative Declaration, or a Draft Environmental Impact Report (EIR) cannot be released for public review before the tribe(s) has had the opportunity to request consultation.

If the tribe(s) requests formal consultation, the EIR cannot be released for public review until consultation between the tribe(s) and the lead agency is completed and mitigation measures acceptable to the tribe(s) are incorporated into the EIR and the related Mitigation Monitoring or Reporting Program.

AB 52 further defines the following terms:

- **California Native American Tribe**: PRC Section 21073 defines a "California Native American Tribe" to mean a Native American tribe located in California that is on the contact list maintained by the NAHC. This definition is broader than the concept of a "federally recognized tribe" that is typically used in implementing various federal laws, including the National Environmental Policy Act.
- **Formal Tribal Consultation**: Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification notice that includes a brief description of the proposed project and its location as well as the lead agency contact information, and a notification statement that the California Native American tribe has 30 days to request consultation.
- **Treatment of Mitigation Measures and Alternatives**: PRC Section 21080.3.2 provides that as part of the consultation process, parties could propose mitigation measures. If the California Native American tribe requests consultation to include project alternatives, mitigation measures, or significant effects, the consultation would be required to cover those topics. Section 21082.3 provides that any mitigation measures agreed upon during this consultation "shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring program" if determined to avoid or lessen a significant impact on a TCR.

A request for a search of the SLF maintained by the NAHC and Tribal Contact List was sent to the NAHC on February 8, 2023. The request encompassed the entire program area. The NAHC responded on February 20, 2023, with positive results for sacred lands within the program area, and provided a list of 23 tribal representatives for Santa Clara, Merced, and San Benito counties. A supplemental SLF search request was sent to the NAHC on August 18, 2023, in response to the addition of the Alamitos Pipeline as part of the PMP; the NAHC responded on August 27, 2023, with positive results for sacred lands and sent an updated contact list of 37 tribal

representatives for Santa Clara, Merced, and San Benito counties. In compliance with AB 52, notification letters regarding the updated PMP were mailed to all 37 tribal representatives on September 20, 2023. The mailing notification included those who have formally requested consultation as well as those identified from the NAHC list within the program area. Valley Water requested a response within 30 days of receipt regarding knowledge of cultural resources, sacred lands, or other heritage sites that may be potentially impacted by proposed PMP activities. One tribe, the Tuolumne Band of Me-Wuk Indians, responded to clarify that the project area is outside of the tribe's ancestral area. No other tribal responses were received.

3.7.4 Impact Assessment Methodology

Previous studies, historical data, and previously recorded cultural resources were analyzed to determine impacts to TCRs within the program area. As discussed in Section 3.6, prior studies within 0.25 mile of the eight pipelines identified for near future work under the PMP were examined and previously recorded cultural resources within the search radius were recorded. Known sites are documented at the NWIC of the CHRIS at Sonoma State University. As stated in Section 3.6, these eight pipelines account for approximately 44-percent of the total pipeline miles covered by the PMP, however, as ground disturbing project activities are required on other pipelines (outside of the eight identified for near future work), Valley Water is required to conduct additional records searches prior to project construction. The impacts analysis accounts for the existence of currently-unknown resources.

The impacts presented in this section were evaluated qualitatively, based on the potential for program activities to disrupt existing or potential TCRs.

Significance Criteria

The impacts of the program on TCRs would be considered significant if they exceeded the following standards of significance:

- **Impact TCR-1:** Cause a substantial adverse change in the significance of a TCR, defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is:
  - listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or
  - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's BMP Handbook (Appendix C) to avoid and minimize adverse effects on

the environment that could result from the program. Although Valley Water's BMP Handbook contains a tribal cultural resource-related BMP (BMP CU-1), this standard BMP is superseded by mitigation measures included in the analysis below.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the PMP to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to TCRs are shown in Table 3.7-1. AMMs are applied to reduce erosion around watercourses, thus reducing likelihood of exposing cultural resources.

Table 3.7-1. Tribal Cultural Resource-Related AMMs

AMM No.	AMM Requirements
AMM HYD-4	**Consider Water Release Volume Reduction Options.** Water release volume reduction options (such as performing maintenance activities with partially full pipelines, employing sectioning valves, and/or opportunities for reuse of water) will be considered prior to draining the pipeline.
AMM HYD-5	**Flow Diversion Measure Implementation.** Where practicable, flows will be diverted around actively eroding areas, or areas that may erode when subjected to release flows to avoid the following: damage to Valley Water property or adjacent property; threats to public safety; and in-channel sedimentation and/or water quality concerns or other beneficial uses, such as riparian habitat or recreation. Flow diversion methods may include the use of flexible piping and/or placement of gravel bags to alter flow direction, or equivalent measures. The new flow path and release point will be monitored for signs of erosion.
AMM HYD-6	**Erosion Control and Dewatering Design.** To protect exposed soil and vegetated surfaces from erosion, existing adequate hard infrastructure (e.g., concrete, quick-setting concrete, or riprap spillways and bubblers/dissipators) or temporary dewatering measures (e.g., visqueen spillways) will be used for all water releases. Visqueen spillway design can include a wattle or gravel bag perimeter with a temporary hose that terminates into a geotextile bag to dissipate flows and filter out sediments, or debris that may be in a pipeline. Water releases will not occur directly over soil, which may erode into receiving watercourses or directly to receiving watercourse in such a way that erosion can occur at the release point.
AMM HYD-9	**Erosion Control and Monitoring.** The release location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, releases will be terminated until appropriate erosion control BMPs are installed. Monitoring will be conducted just before the start of the release and regularly (e.g., every hour, every 4 hours, daily) during the release. The monitoring frequency will depend on site conditions and the nature of the release.
AMM HYD-10	**Inspection and Restoration of Eroded Areas.** An environmental monitor will walk along each release drainage 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures shall be taken to correct the erosion, if necessary. Correction measures may include installation of soil

AMM No.	AMM Requirements
	stabilization measures (e.g., wattles), hydroseeding, and/or recontouring the land to its previous state.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program. Therefore, impact analyses were conducted assuming application of these VHP conditions in VHP-covered program areas. Similar to program-specific AMMs, these VHP conditions are applied to reduce erosion around watercourses, thus reducing likelihood of exposing cultural resources. The VHP conditions applicable to tribal cultural resources are provided in Table 3.7-4.

Table 3.7-2 VHP Conditions Applicable to Cultural Resources

Condition No.	VHP Condition
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality
Condition 4	Avoidance and Minimization for In-Stream Projects
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance

Note: VHP Conditions 3, 4, and 5 require compliance with a suite of avoidance and minimization measures listed in Table 6-2 of the VHP; these are provided Table 2.7-4 in Chapter 2.

3.7.5 Impact Analysis

Impact TCR-1: Would the program cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe (less than significant with mitigation incorporated)

As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Tasks that would involve ground disturbance and have the potential to impact TCRs would include:

- Dewatering

- Excavation, construction, and other ground disturbance

Dewatering
As discussed under Impact CUL-2, dewatering has the potential to result in erosion. Water releases may also occur in close proximity to waterways, which have a higher sensitivity rating for potential discovery of TCRs. Existing standard water release practices and procedures implemented by Valley Water are designed to reduce erosion potential. Compliance with VHP conditions (in VHP-covered program areas) and implementation of several AMMs across the program area would further reduce the potential for erosion to unearth buried TCRs. AMM HYD-4, AMM HYD-5, and AMM HYD-6 would restrict water release flows, redirect flows around actively eroding areas, and require implementation of erosion control devices, respectively. AMM HYD-9 and AMM HYD-10 would require monitoring of the release location and along the drainage to inspect for signs of erosion. However, even with implementation of these VHP conditions and AMMs, the potential for the program to result in adverse effects to TCRs, although unlikely, cannot be fully eliminated. Program areas, especially those that are undisturbed, have the potential for yielding as-yet-undiscovered archaeological resources. Because implementation of ground disturbing program tasks has the potential to damage or destroy unknown TCRs, the impact would be **significant**.

Excavation, Construction, and Other Ground Disturbance
Program activities involving excavation and ground disturbance would include repairs to existing water transmission and delivery infrastructure as well as repairs to existing access roads. Because these facilities and roadways are already in place, most of the proposed work is not expected to disturb previously undisturbed sediment. Therefore, these program tasks are unlikely to result in adverse effects to TCRs. However, if any program activities would require disturbance to previously undisturbed sediment (e.g., repairs that would require disturbance outside the original disturbance prism), they have the potential to damage or destroy TCRs. The impact would be **significant**.

Significance Determination
Significant

Mitigation
To reduce the potential impacts to TCRs, Valley Water would implement Mitigation Measure (MM) CUL-1 and MM CUL-2, as described below.

> **MM CUL-1: Actions to Be Taken Prior to Disturbance or Excavation of Native (Non-Fill) Sediments.** Prior to the initiation of excavation activities that will disturb native soil, a cultural resources specialist will conduct a records search to determine whether known cultural resources are present within the program work area and whether the program work area has been previously studied. The record search will be conducted by a professional archaeologist at the Northwest Information Center of the California Historical Resource Information System, Sonoma State University, Rohnert Park. The record search will document cultural resources with a one-quarter mile radius of the

planned excavation boundaries, and will obtain all pertinent cultural resources documents, maps, and records needed to assess the program work area's potential to contain significant cultural resources. A records search will not be necessary for work along Valley Water facilities for which a records search or cultural resource inventory study has been carried out within the past 5 years.

If the record search results indicate that a survey has not been conducted or was conducted more than 5 years ago, a cultural resources inventory (survey) of the program work area will be conducted. The survey will document whether surface cultural materials (historic-era or precontact) are present within the program work area. The results of the record search and, if needed, cultural resources inventory will be presented in a report to Valley Water along with recommendations on how to proceed.

If during evaluation of a PMP project, using the Preliminary Environmental Review Checklist (Appendix D), it is identified that excavations are to occur at or near known precontact archaeological sites, TCRs, and sites with known Native American burials, a Native American Monitor will be present. If Native American human remains are found during any field investigations, they must be treated with the utmost respect. All provisions of California Health and Safety Code Sections 7054 and 7050.5 and Public Resources Code Sections 5097.9 through 5097.99, as amended per Assembly Bill 2641, must be followed.

If a program activity involves excavation of subsurface sediments in an area classified as highest to moderate potential for buried cultural deposits (as indicated in Table 3.6-3), a Registered Professional Archaeologist (RPA) will be consulted as to the best course of action. This may include preemptive backhoe work or monitoring of excavations to determine the presence or absence of buried sites.

MM CUL-2: Inadvertent Discovery Plan. If an unanticipated archaeological resource is encountered during construction or dewatering, work in the immediate vicinity of the find will cease until all requirements relating to archaeological discoveries (described below) have been satisfied. Any ground-disturbing activities (including dewatering) will be halted within a 100-foot radius. The area will be secure from vandalism or further disturbance; a "no work" zone utilizing appropriate flagging will be created; and construction personnel will notify appropriate Valley Water staff. An RPA will be consulted and will evaluate the find and recommend further management actions.

The RPA will conduct a field assessment to determine if the discovery constitutes a potentially significant archaeological resource that requires further evaluation. The RPA will be familiar with standard thresholds of eligibility for precontact and/or historic-era resources. If the find is deemed potentially significant, it will be covered and/or fenced for protection, and crews will move to a new location so that a more in-depth evaluation and mitigation (if needed) can occur.

The RPA will provide Valley Water with written and digital photographic documentation of all observed materials. They will also discuss site constituents utilizing the guidelines for evaluating archaeological resources for inclusion on the National and/or California Register to make recommendations concerning a site's eligibility. Based on the assessment, Valley Water will identify the appropriate CEQA and Section 106 cultural resources compliance procedure to be implemented.

If the find does not appear to meet the criteria of the National or California Register, construction may continue and, depending on the find, may require monitoring by the RPA. The authorized maintenance work may resume at the discovery site only after Valley Water Construction Manager has retained an RPA to monitor the site during continued construction and the Environmental Services Unit Manager has provided authorization to the Valley Water Construction Manager to continue work.

If the find appears significant, the RPA will determine if adverse impacts to the resources can be avoided. When avoidance is not feasible (e.g., maintenance activities cannot be deferred or they must be completed to satisfy the program objective), Valley Water will develop an Action Plan (data-recovery plan). It will be prepared in accordance with the current professional standards and state and federal guidelines for reporting the results of the work and will describe the services of a Native American Monitor and a proposal for curation of cultural materials recovered from a non-grave context. The recovery effort will be detailed in a report prepared by the RPA in accordance with current archaeological standards.

In the event of the discovery of human remains (or the find consists of bones suspected to be human), the field crew supervisor will take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent. A Valley Water representative will immediately notify the appropriate County Coroner and provide information that identifies the remains as Native American. If the remains are determined to be Native American, the Coroner will contact the NAHC within 24 hours of being notified of the remains. The NAHC then designates and notifies within 24 hours a MLD. The MLD has 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and any associated artifacts. Human remains will be preserved in situ if continuation of the maintenance work, as determined by the RPA and MLD, will not cause further damage to the remains (this is the preferred alternative). The remains and any associated artifacts will be documented and the discovery location carefully backfilled (with protective geo-fabric if desirable) and recorded in Valley Water project files, Environmental Services Manager protected cultural resources files, and Valley Water library protected files.

If human remains, or associated burial items are exposed and cannot be protected from further damage, they will be exhumed by the RPA at the discretion of the MLD and reburied with the concurrence of the MLD in a place mutually agreed upon by all parties.

Significance after Mitigation

Implementation of MM CUL-1 would require a site-specific review of known archaeological resources, including TCRs, for any work areas outside previously disturbed areas prior to ground disturbance and consultation with an RPA to establish program task-specific protection measures, if warranted. MM CUL-1 also requires formal consultation with the Native American community to identify potential areas of concern or burial sites. In the unlikely event that potential TCRs are discovered during ground-disturbing activities, including dewatering, MM CUL-2 would ensure appropriate evaluation of the resource or remains occurs and protection and/or preservation measures are implemented in compliance with regulatory requirements. The impact would be **less than significant with mitigation incorporated**.

3.8 Air Quality

This section provides an overview of air quality in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts on air quality from program implementation.

3.8.1 Definitions

Criteria Air Pollutants

Overview

As required by the 1970 federal Clean Air Act (CAA), the USEPA initially identified six *criteria air pollutants*[1] that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. These six criteria air pollutants are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM)[2], and lead. The California Air Resources Control Board (CARB) has identified four additional criteria air pollutants—sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility reducing particles (CARB 2023b).

Both USEPA and CARB have set primary and secondary standards for criteria air pollutants, as follows:

- Primary standards are the levels of air quality necessary to protect public health with an adequate margin of safety.
- Secondary standards are the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

The following discussion summarizes the potential health and welfare effects and typical sources of air pollutants (CARB 2023b).

Ozone

O_3 is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. O_3 is a regional air pollutant because it is not emitted directly into the atmosphere but is a secondary air pollutant that is produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG), also referred to as volatile organic compounds (VOCs) and nitrogen oxides (NOx). ROG or VOC, and NOx are known as precursor compounds for

[1] The EPA calls these pollutants *criteria air pollutants* because the agency regulates them by specific public health-based and welfare-based criteria that set permissible levels.
[2] Particulate matter criteria pollutants are classified as either respirable particulate matter less than 10 micrometers in diameter (PM_{10}) or fine particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$).

ozone. Substantial ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately 3 hours. Ozone concentrations tend to be higher in late spring, summer, and fall, when long sunny days combine with regional air subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds (CARB, n.d.).

Carbon Monoxide

CO is a nonreactive pollutant that is a product of incomplete combustion of organic material. It is generally associated with motor vehicle traffic, and in winter, with wood-burning stoves and fireplaces. High CO concentrations develop primarily in winter, when periods of light winds combine with the formation of ground-level temperature inversions (typically from evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

When inhaled at high concentrations, CO combines with hemoglobin in the blood, reducing its oxygen-carrying capacity and resulting in reduced levels of oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s, when CO levels were exceeded regularly throughout California. However, more recently, CO measurements and modeling are not a priority in most California air districts because of the retirement of older vehicles, fewer emissions from new vehicles, and improvements in fuels (CARB, n.d.-b).

Nitrogen Dioxide

When combustion temperatures are extremely high, as in aircraft, truck, and automobile engines, atmospheric nitrogen combines with oxygen to form various oxides of nitrogen. Nitric oxide (NO) and NO_2 are the most significant air pollutants and generally are referred to as NOx. NO is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO_2, and can be measured. NO_2 has been determined to be a lung irritant, capable of producing pulmonary edema. Inhaling NO_2 can lead to respiratory illnesses, such as bronchitis and pneumonia. NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels (CARB, n.d.-f).

Volatile Organic Compounds or Reactive Organic Gases

VOCs are any compounds of carbon (excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) that participate in atmospheric photochemical reactions, and thus are a precursor of ozone formation. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. VOCs are emitted by a wide array of products, such as paints and lacquers, paint strippers, cleaning supplies, building materials and furnishings, as well as fuel storage and use.

VOCs can cause eye, nose, and throat irritation; headaches, loss of coordination, and nausea; and damage to the liver, kidneys, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans. The ability of organic chemicals to cause health effects varies greatly, from those that are highly toxic to those with no known health effect. As with other pollutants, the extent and nature of the health effect depends on many factors, including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced, soon after exposure to some organics (EPA 2023).

Sulfur Dioxide

SO_2 is a colorless, acidic gas with a strong odor. SO_2 is a combustion product of sulfur or sulfur-containing fuels, such as coal and diesel. SO_2 also is a precursor to the formation of atmospheric sulfate and PM and contributes to the potential formation of atmospheric sulfuric acid that can precipitate downwind as acid rain. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease (CARB, n.d.-h).

Lead

Lead has a range of adverse neurotoxin health effects and formerly was released into the atmosphere via leaded gasoline products. The phase-out of leaded gasoline in California has resulted in dramatically decreased levels of atmospheric lead. The highest concentrations of lead in the air generally are found near lead smelters and general aviation airports, where piston aircraft use leaded fuel. Other stationary sources that generate lead emissions include waste incinerators, utilities, and lead-acid battery manufacturers. Lead is a highly stable compound that accumulates in the environment and in living organisms. Lead is considered by CARB to be a toxic air contaminant (TAC). Any level of lead exposure has adverse health effects. The BAAQMD monitors lead emissions from industrial operations through the TAC reporting process (CARB, n.d.-e).

Particulate Matter

Particulate matter is a combination of liquid or solid particles suspended in the air. Particulate matter with a diameter of 10 microns or less (PM_{10}) and fine particulate matter with a diameter of 2.5 microns and smaller ($PM_{2.5}$) represent fractions of particulate matter that can be inhaled into the air passages and lungs, causing adverse health effects. PM in the atmosphere results from many kinds of dust and fume-producing industrial and agricultural operations, fuel combustion, wood-burning stoves and fireplaces, and atmospheric photochemical reactions. Some sources of PM, such as demolition, construction activities, and mining, are generally more local in occurrence, while others, such as vehicular traffic and wood-burning stoves and fireplaces, have a more regional effect.

Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to human health. Particulates also can damage materials and reduce visibility. Dust that is made of large particles (diameter greater than 10 micrometers) settles out rapidly and is easily filtered by

human breathing passages. This dust is of concern more as a soiling nuisance rather than as a health hazard. The remaining fractions, PM_{10} and $PM_{2.5}$, are a health concern particularly at levels above the federal and California ambient air quality standards. $PM_{2.5}$, including diesel exhaust particles) are considered to have greater effects on health, because these particles are small enough to penetrate the deepest parts of the lungs.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of PM in the air. Despite important gaps in scientific knowledge, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (CARB, n.d.-d).

3.8.2 Environmental Setting

Air Basins

California is divided geographically into 15 air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. Most of the program area is within the San Francisco Bay Area Air Basin (SFBAAB) and is managed and regulated by the BAAQMD. The SFBAAB covers approximately 5,340 square miles and encompasses Napa, Marin, San Francisco, Contra Costa, Alameda, San Mateo, and Santa Clara counties, as well as portions of southern Sonoma County and western Solano County.

Approximately 2 miles of the Santa Clara Conduit lies within northern San Benito County, which is part of the North Central Coast Air Basin, under the jurisdiction of the Monterey Bay Air Resource District (MBARD). Approximately 2.5 miles of the Pacheco Conduit is in western Merced County, which is in the San Joaquin Valley Air Basin and managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Climate, Meteorology, and Geography

Climate and topography dictate the potential for air pollution to build up or concentrate in geographic areas. The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. 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 (BAAQMD 2017c).

Most of the program area is within the Santa Clara Valley subregion of the SFBAAB, which is bounded by the San Francisco Bay to the north and by mountains to the east, south, and west. Temperatures are warm on summer days and cool on summer nights, and winter temperatures are fairly mild. Temperatures in the Santa Clara Valley generally range from the 80s in summer to the 50s in winter (BAAQMD 2017c).

Winds in the Santa Clara Valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly drainage flow occurs during the late evening and early morning. Wind speeds are greatest in spring and summer, and are weakest in fall and winter (BAAQMD 2017c).

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air, and the mountains surrounding the valley combine to promote ozone formation in combination with many ozone precursors from San Francisco, San Mateo, and Alameda counties, carried in the Santa Clara Valley by prevailing winds. In addition, the pollution sources are plentiful in the Santa Clara Valley, predominately from Silicon Valley industry, Santa Clara Valley's large population, and work-site destinations that generate the highest mobile source emissions of any subregion in the SFBAAB (BAAQMD 2017c).

Pacheco State Park, traversed by 2.5 miles of the Pacheco Conduit, is on the western rim of the San Joaquin Valley, which is an intermountain valley bounded to the east by the Sierra Nevada, to the west by the Coast Range, and to the south by the Tehachapi Mountains. Air flow and weather patterns within the San Joaquin Valley Air Basin (SJVAB) are variable throughout the year, affecting seasonal air quality. Air quality during the winter months generally is better because of the frequency of winter rains followed by atmospheric instabilities increasing the vertical atmospheric mixing. In general, the SJVAB experiences mild winters and hot and dry summers (with frequent inversion layers), with airflow and dispersion at its highest during spring and fall (California State Parks 2006).

Approximately 2 miles of the Santa Clara Conduit lies within northern San Benito County and the northern tip of the Hollister Valley, part of the North Central Coast Air Basin and under the jurisdiction of the MBARD. The Hollister Valley is defined by the San Benito River Valley in north-central San Benito County. The valley has a northwest to southwest alignment and opens on the northwest end into the Monterey Bay coastal plain. The climate of the air basin is controlled by a semi-permanent high-pressure cell over the eastern Pacific Ocean, which is more dominant in summer, triggering persistent west and northwest winds over the entire length of the state's coastline. The North Central Coast Air Basin experiences its most significant air quality problems in late spring and fall, when a combination of weak onshore winds and a stable temperature create an inversion that restricts the vertical and horizontal dispersion of pollutants. In the northern portion of San Benito County, the air quality can be worsened by the occurrence of north or east winds, which transport pollutants into the region from either the San Francisco Bay Region or the Central Valley, respectively (City of Hollister 2005).

Existing Air Quality Conditions

USEPA and CARB designate areas based on the attainment status for air quality standards (i.e., National Ambient Air Quality Standards [NAAQS] or California Ambient Air Quality Standards [CAAQS]). Attainment areas meet or exceed ambient air quality standards, and nonattainment areas do not. Nonattainment areas are sometimes classified by degree of underperformance (i.e., marginal, moderate, serious, severe, and extreme). If insufficient air

quality monitoring data exists for USEPA or CARB to determine the status and support a classification, the area is unclassified. Unclassified areas are generally assumed to meet the ambient air quality standards.

Each year, the BAAQMD summarizes data collected from the Bay Area's air quality monitoring network. Table 3.8-1 summarizes the latest air quality reports from the San Jose air quality monitoring station in Santa Clara Valley. Table 3.8-2 shows the attainment status of the NAAQS and CAAQS in the SFBAAB. The SFBAAB, including Santa Clara County, is in attainment for CO, NO_2, SO_2, and lead pollutant standards. However, the SFBAAB is in non-attainment for both national and state ozone standards, State respirable PM standards, and for both national and State standards for fine PM.

The North Central Coast Air Basin, under the jurisdiction of the MBARD, is out of attainment for PM_{10} (MBARD 2017). The San Joaquin Valley Air Basin, managed by the SJVAPCD, is out of attainment for O_3, PM_{10}, and $PM_{2.5}$ (SJVAPCD 2023).

Table 3.8-1 Air Quality Data Summary (2017–2019)

Pollutant	Standard	Threshold (State/ Federal)	2017 Max Monitored Value	2017 # Days Exceeded (state/ federal)	2018 Max Monitored Value	2018 # Days Exceeded (state/ federal)	2019 Max Monitored Value	2019 # Days Exceeded (state/ federal)
Ozone	Highest 1 Hour	0.09 / - ppm	121	3 (state)	78	0 (state)	95	1 (state)
Ozone	Highest 8 Hour	0.070 / 0.070 ppm	98	2 / 2	61	0 / 0	81	2 / 2
Carbon Monoxide (CO)	Highest 1 Hour	20 / 35 ppm	2.1	0 / 0	2.5	0 / 0	1.7	0 / 0
Carbon Monoxide (CO)	Highest 8 Hour	9.0 / 9 ppm	1.8	0 / 0	2.1	0	1.3	0
Nitrogen Dioxide (NO2)	Highest 1 Hour	0.18 / 0.100 ppm	68	0 / 0	86	0	60	0
Nitrogen Dioxide (NO2)	Annual Average	0.030 / 0.053 ppm	12	-	13	-	11	-
Sulfur Dioxide (SO2)	Highest 1 Hour	- / 0.075 ppm	3.6	0 / 0	6.9	0	14.5	0
Sulfur Dioxide (SO2)	Highest 24-Hour	0.04 / - ppm	1.1	0 / 0	1.1	0	1.5	0
Particulate Matter (PM10)	Highest 24-Hour	50 / 150 µg/m^3	70	6 / 0	122	4 (federal)	77	4 (federal)
Particulate Matter (PM10)	Annual Average	20 / - µg/m^3	21.6	-	23.1	-	19.2	-
Particulate Matter (PM2.5)	Highest 24-Hour	- / 35 µg/m^3	49.7	6 (federal)	133.9	15 (federal)	27.6	0 (federal

Pollutant	Standard	Threshold (State/ Federal)	2017 Max Monitored Value	2017 # Days Exceeded (state/ federal)	2018 Max Monitored Value	2018 # Days Exceeded (state/ federal)	2019 Max Monitored Value	2019 # Days Exceeded (state/ federal)
Particulate Matter (PM2.5)	Annual Average	12 / 12.0 µg/m^3	9.5	-	12.8	-	9.1	-

Source: BAAQMD 2020

Table 3.8-2 Ambient Air Quality Standards and San Francisco Bay Area Air Basin Attainment Status

Pollutant	Averaging Time	State Standard [a]		National Standard [b]	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone (O_3)	1-Hour	0.09 ppm	**Non-attainment**	–	–
	8-Hour	0.070 ppm	**Non-attainment**	0.07 ppm	**Non-Attainment**
Carbon Monoxide (CO)	1-Hour	20 ppm	Attainment	35 ppm	Attainment
	8-Hour	9.0 ppm	Attainment	9 ppm	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm	Attainment	0.1 ppm	Unclassified
	Annual	0.030 ppm	–	0.053 ppm	Attainment
Sulfur Dioxide (SO_2)	1-Hour	0.25 ppm	Attainment	0.075 ppm	Attainment
	24-Hour	0.04 ppm	Attainment	0.14 ppm	Attainment
	Annual	–	–	0.03 ppm	Attainment
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	**Non-Attainment**	150 µg/m3	Unclassified
	Annual	20 µg/m^3	**Non-Attainment**	–	–
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	–	–	35 µg/m^3	**Non-Attainment**
	Annual	12 µg/m3	**Non-Attainment**	12 µg/m^3	Unclassified/ Attainment*
Lead (Pb)	Monthly	1.5 µg/m3	Attainment	–	–
	Quarterly	–	–	1.5 µg/m^3	Attainment

Notes: ppm = parts per million; µg/m3= micrograms per cubic meter

[a] State standards for ozone, CO (except Lake Tahoe), SO2 (1-hour and 24-hour), NO2, PM, and visibility-reducing particles are values that are not to be exceeded. All other State standards that are shown are values not to be equaled or exceeded.

[b] National standards, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour PM2.5 standard is attained when the 3-year average of the 98th percentile is less than the standard.

[c] In December 2012, USEPA strengthened the annual PM2.5 National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter (µg/m3). In December 2014, USEPA issued final area designations for the 2012 primary annual PM2.5 NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Source: BAAQMD 2017

Toxic Air Contaminants

TACs (also referred to as hazardous air pollutants or air toxics) are a broad class of compounds known to have the potential to cause morbidity or mortality (e.g., have carcinogenic qualities). TACs are substances that are identified by the CalEPA, listed in Title 17, Section 93000 of the CCR as air pollutants that may pose a present or potential hazard to human health. TACs can cause long-term health effects, including cancer, asthma, and neurological damage as well as short-term health effects, including eye watering and headaches. According to the findings of the BAAQMD Community Air Risk Evaluation Program, diesel particulate matter (DPM), mostly from on and off-road mobile sources, accounts for more than 80 percent of the inhalation cancer risk from TACs in the Bay Area (BAAQMD 2017b). Diesel exhaust is a complex mixture of gases, vapors, and fine particles. Some of the gaseous components of diesel exhaust, such as benzene, formaldehyde, and 1,3-butadiene, are suspected or known to cause cancer in humans.

Sensitive Receptors

The BAAQMD defines sensitive receptors members of the population who are particularly sensitive to the effects of air pollutants, including children, the elderly, and people with illnesses (BAAQMD 2022). Sensitive receptors can be categorized as follows: residences (e.g., houses, apartments, retirement homes); active recreational land uses (e.g., sports fields); medical facilities (e.g., hospitals, long-term health care facilities); eldercare facilities (e.g., convalescent homes); schools and playgrounds; and childcare centers. Sensitive receptors have varying degrees of sensitivity to TACs. Residential areas are sensitive to poor air quality because people are often at home for extended periods. Active recreational land uses, such as sports fields, have a moderate sensitivity because vigorous exercise places a high demand on respiratory function. Some receptors are considered more sensitive to air pollutants than others because of pre-existing health problems, age, proximity to an emissions source, or duration of exposure to air pollutants. Facilities and land uses that support populations with a relatively high sensitivity to poor air quality include schools, childcare centers, playgrounds, hospitals, and convalescent homes because children, the elderly, and the sick are more susceptible to respiratory infections and other air quality-related health problems than the general public. Children under 16 years are more susceptible to carcinogens compared to adults. Thus, childcare centers and schools are considered the highest-risk sensitive receptors. The BAAQMD recommends identifying sensitive receptors generally within 1,000 feet of a project site (BAAQMD 2022). Active recreationalists are not considered sensitive receptors because of their mobility, which limits their exposure duration.

Naturally Occurring Asbestos

Asbestos is a group of naturally occurring fibrous minerals that were commonly used from the mid-1940s to the mid-1980s in building materials because of their high tensile strength and flexibility as well as fire-retardant properties. Asbestos was identified by CARB as a TAC and is classified as a known human carcinogen by State, federal, and international agencies (CARB 2023a). Inhaled asbestos dust in any quantity can contribute to eventual severe health problems, such as mesothelioma and other cancers (International Agency for Research on Cancer 2012). Because of the historical widespread use of asbestos in household and industrial products,

individuals living in the U.S. have potentially been exposed to asbestos (National Toxicology Program 2021).

Six mineral types that have asbestiform habit (long, thin, hair-like fiber) include those from the chrysotile (serpentinite) and amphibole. Asbestos is released from these minerals when broken or crushed. Serpentine rocks can be crushed when cars drive over unpaved roads or driveways that are surfaced with these rocks, when land is graded, or naturally through weathering and erosion. After being released from the rock, asbestos can become airborne and remain in the air for extended periods. The program area contains scattered locations of serpentine soils, which when broken down from serpentine rocks, can contain NOA. Locations of NOA in the program area are shown in Figure 3.4-2, in Section 3.4, Hazards and Hazardous Materials.

3.8.3 Regulatory Setting

Federal Regulations, Policies, and Standards

Clean Air Act

USEPA is responsible for enforcing the CAA and the 1990 amendments. This law defines USEPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer and includes provisions for USEPA to set national emission standards for hazardous air pollutants, including asbestos. The NAAQS were established by the CAA of 1970 and amended in 1977 and 1990. The ambient air quality standards are prescribed levels of pollutants that represent safe levels that avoid specific adverse health effects associated with each pollutant.

As part of its enforcement responsibilities, USEPA requires each state with non-attainment areas to prepare and submit a State Implementation Plan (SIP), to demonstrate the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution in non-attainment areas, using a combination of performance standards and market-based programs. Local air district standards are intended to meet NAAQS and achieve the goals of the SIP.

Occupational Safety and Health Administration

OSHA was established in 1971 under the Occupational Safety and Health Act, to assure safe and healthy working conditions for employees by setting and enforcing standards. Worker safety and health regulations are regulated under the Occupational Safety and Health Act (U.S. Code Section 651 et seq.) and enforced by OSHA through regulations under Title 29 of the CFR. Asbestos hazards are addressed in specific standards for general industry, maritime, and construction under Title 29 CRF 1910 Subpart Z. Under this regulation, employers must ensure that no employee performing construction activities is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air as an 8-hour time-weighted average.

State Regulations, Policies, and Standards

California Clean Air Act

The California Clean Air Act (CCAA) regulates emissions from motor vehicles and consumer products in the state. CARB oversees air quality planning and control throughout California. CARB is primarily responsible for ensuring implementation of the 1989 amendments to the CCAA. CARB has established emission standards for vehicles sold in California and for various types of equipment available commercially. CARB also sets fuel specifications to further reduce vehicular emissions and develops airborne toxic control measures to reduce TACs identified under CARB regulations. CARB oversees regional air district activities and regulates air quality at the State level.

Pursuant to the CCAA, CARB is responsible for setting CAAQS under Section 39606 of the California Health and Safety Code. The CAAQS, listed in Table 3.8-2 and discussed previously, are intended to protect public health, safety, and welfare.

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs, including DPM, and has adopted USEPA's list of hazardous air pollutants as TACs.

California Division of Occupational Safety and Health

The Cal/OSHA was established in 1973 by the California Occupational Safety and Health Act, with the goal of protecting public health and safety in workplaces and other areas where the public may frequent. Title 8 Section 1529 of the California Code of Regulations relates to asbestos in the construction industry. Section 1529 requires the following of a contractor on a job site:

- Determine whether and where asbestos is present before starting work.
- Ensure the proper handling of, and protection from any asbestos present.
- Inform any other affected parties of any asbestos threat and the measures being taken to minimize or prevent it.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

In 2001, CARB approved the ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (Title 17 CCR Section 93105). This ATCM requires implementation of best available dust mitigation measures during ground-disturbing activities (including the road maintenance, construction, and grading activities proposed as part of the program) in areas where NOA is likely to be found. Such 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 BAAQMD or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or NOA on the

site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

As required by the ATCM, road construction and maintenance operations must use dust control measures for a specified set of emission sources and prevent visible emissions crossing the program work area boundaries. The BAAQMD must also be notified before any work begins.

Pacheco State Park General Plan
The General Plan for Pacheco State Park identifies the long-term vision and goals for the park and provides guidelines for protecting park resources (California Department of Parks and Recreation 2006). The General Plan does not include goals or policies applicable to air quality.

Local Regulations, Policies, and Standards

Bay Area Air Quality Management District
The BAAQMD is the regional agency, primarily responsible for preparing regional clean air plans, regulating air pollution emissions from stationary sources (e.g., factories), and controlling indirect sources (e.g., land use project emissions), as well as monitoring ambient pollutant concentrations. The BAAQMD's jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa—and portions of Solano and Sonoma counties.

The BAAQMD's clean air strategy includes preparation of plans and programs for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA and CCAA.

SFBAAB 2017 Clean Air Plan
The most recently adopted air quality plan for the SFBAAB is the 2017 Clean Air Plan (CAP). The BAAQMD adopted the 2017 CAP to address state nonattainment in SFBAAB for both the 1- and 8-hour ozone standards. The primary goals of the 2017 CAP are to protect public health by decreasing exposure to particulate matter and TACs as well as regional ROG, NOx, and $PM_{2.5}$, and to protect the climate by reducing GHG emissions.

To meet the primary goals, the 2017 CAP recommends specific control measures and actions. These control measures are grouped into various categories that include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. To this end, the 2017 CAP includes 85 control measures that are aimed at reducing air pollution in the SFBAAB. The 85 control measures are categorized into nine economic sectors, including transportation, energy, agriculture, and natural and working lands (BAAQMD 2017b).

BAAQMD CEQA Air Quality Guidelines
The BAAQMD CEQA Air Quality Guidelines (Guidelines) advise lead agencies about how to evaluate potential air quality impacts, including establishing quantitative and qualitative

thresholds of significance. In April 2022, BAAQMD adopted its 2022 update to the Guidelines (BAAQMD 2022). The thresholds of significance for construction and operational-related criteria air pollutants and precursor emissions are presented in Table 3.8-3.

Table 3.8-3 BAAQMD Thresholds of Significance for SFBAAB

Pollutant/ Precursor	Construction Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds Annual Average Emissions (tons/year)
ROG	54	54	10
NOx	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
CO	none	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)
Fugitive dust	best management practices	none	none

Note:
a. Fugitive dust (PM_{10}/$PM_{2.5}$) also is recognized to impact local communities. The BAAQMD strongly recommends implementing all feasible fugitive dust management practices, especially when construction projects are near sensitive communities, including schools, residential areas, or other sensitive land uses. These measures are detailed in Chapter 5, Section 5.2.2, Construction-Related Criteria Air Pollutant Emissions of the BAAQMD CEQA Guidelines.

Source: BAAQMD 2022

Regulation 11, Hazardous Pollutants, Rule 2

The BAAQMD's Regulation 11, Hazardous Pollutants, Rule 2 provides stipulations for activities involving handling, transportation, and disposal of asbestos-containing material. Specific disposal methods for asbestos-containing material are required under Rule 2. All asbestos-containing waste from program excavation would be required to be disposed at waste disposal sites that are operated in accordance with this BAAQMD regulation. All vehicles transporting asbestos-containing waste material are required to be marked during loading and unloading of waste. The signs are to be visible and be displayed in such a manner that a person can easily read the legend.

Monterey Bay Air Resource District

Air Quality Management Plan

MBARD is required to develop an attainment plan to address ozone violations and periodically prepare and submit a report to CARB that assesses its progress toward attainment of the CAAQS. The 2012–2015 Air Quality Management Plan (AQMP) is the seventh update to the 1991 AQMP. The 2012–2015 AQMP shows that the region continues to make progress toward meeting the State ozone standard.

The 2012–2015 AQMP only addresses attainment of the State ozone standard. It is an assessment and update to the *2012 Triennial Plan*. In 2012, USEPA designated the North Central

Coast Air Basin as in attainment with the 8-hour ozone NAAQS. In 2015, the NAAQS were revised to 0.070 parts per million. The NCCAB continues to be in attainment with the stricter national standards (MBARD 2017).

Program activities within MBARD's jurisdiction, which is limited to approximately 2 miles of the Santa Clara Conduit in San Benito County, are subject to the rules and regulations in the *2012–2015 AQMP* and must comply with the State ozone attainment standards.

The thresholds of significance for construction and operational-related criteria air pollutants and precursor emissions are presented in Table 3.8-4.

Table 3.8-4 MBARD Thresholds of Significance for NCCAB

Pollutant/ Precursor	Construction Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds Average Daily Emissions (pounds/day)
ROG	N/A	137 (total direct and indirect)
NOx	N/A	137 (total direct and indirect)
PM10	82	82 (on-site)
CO	N/A	Significantly affect levels of service at intersections or road segments
SOx	N/A	150 lb/day

Source: MBUAPCD 2008

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within the San Joaquin Valley Air Basin. The SJVAPCD also has responsibility for monitoring air quality as well as for setting and enforcing limits for source emissions. The SJVAPCD currently maintains plans for ozone, PM_{10}, and $PM_{2.5}$.

The SJVAPCD Rules and Regulations include Regulation VIII Fugitive PM_{10} Prohibitions, which was developed to reduce ambient concentrations of PM_{10} by developing rules to control specified anthropogenic fugitive dust sources. The rules were developed pursuant to USEPA guidance for Serious PM_{10} Nonattainment Areas. Regulation VIII has seven rules, aimed at controlling fugitive dust from specific sources, which include construction and other earth-moving activities, carryout and track-out, open areas, paved and unpaved roads, and unpaved equipment traffic areas. In most cases, the rules primarily aim to reduce the speed and amount of traffic traveling over unpaved surfaces. This is generally done by either reducing the number of dusty areas or restricting traffic in dusty areas.

Program activities within the SJVAPCD's jurisdiction, which is limited to approximately 2.5 miles of the Pacheco Conduit in Merced County, are subject to the plans for ozone, PM_{10}, and $PM_{2.5}$, as well as to the Regulation VIII Fugitive PM10 Prohibitions.

The thresholds of significance for construction and operational-related criteria air pollutants and precursor emissions are presented in Table 3.8-5.

Table 3.8-5 SJVAPCD Thresholds of Significance

Pollutant/ Precursor	Construction Thresholds (tons/year)	Operational Thresholds Permitted Equipment and Activities (tons/year)	Operational Thresholds Non-Permitted Equipment and Activities (tons/year)	Average pounds/day to reach tons/year threshold
ROG	10	10	10	55
NOx	10	10	10	55
PM10	15	15	15	82
PM2.5	15	15	15	82
CO	100	100	100	548
SOx	27	27	27	148

Source: SJVAPCD 2015

Santa Clara County

Santa Clara County General Plan

The Air Quality and Climate Change chapter in the Health Element of the Santa Clara County General Plan includes goals and policies providing guidelines for air quality. The Air Quality and Climate Change chapter outlines the correlation between well-planned, safe, highly livable urban environments and improved health outcomes, such as reductions in chronic disease (Santa Clara County 2015).

The General Plan goals and polices that may apply to the program include:

Strategy #1: Strive for air quality improvement through regional and local land use, transportation, and air quality planning.

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.

General Plans of Incorporated Cities within Santa Clara County

Various energy resources are regulated by incorporated cities or towns in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to energy use:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)

- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The policies for each municipality are too numerous to identify herein. However, the general plans commonly have goals and policies that are focused on minimizing air pollutant emissions from new and existing development, minimize exposure to people to air pollution and toxic air contaminants, and improve overall air quality by implementing best management practices (BMPs).

San Benito County

San Benito County General Plan

The Air Quality element in the Health and Safety Element of the San Benito County General Plan includes goals and policies providing guidelines for air quality (San Benito County 2015). The General Plan goals and polices that may apply to the program include:

HS-5.4 PM_{10} Emissions from Construction. The County shall require developers to reduce particulate matter emissions from construction (e.g., grading, excavation, and demolition) consistent with standards established by the Monterey Bay Unified Air Pollution Control District.

HS-5.6 New Construction Mitigation. The County shall work in coordination with the Monterey Bay Unified Air Pollution Control District to minimize air emissions from construction activities associated with proposed development.

Merced County

Merced County General Plan

The Air Quality element of the Merced County General Plan includes goals and policies providing guidelines for air quality. The Air Quality element includes policies that support the reduction of PM_{10} and $PM_{2.5}$ emissions and other particulates from sources in Merced County (Merced County 2013). The General Plan goals and polices that may apply to the program include:

AQ-6.1 Particulate Emissions from Construction. Support the San Joaquin Valley Air Pollution Control District's efforts to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible and consistent with State and Federal regulations.

AQ-6.2 Emissions from County Roads. Require PM10 and PM2.5 emission reductions on County-maintained roads to the maximum extent feasible and consistent with State and Federal regulations.

Valley Water Climate Change Action Plan
Valley Water's Climate Change Action Plan (CCAP) builds on Valley Water's existing climate change efforts, by identifying the ways in which Valley Water and Santa Clara County are vulnerable to climate change and providing goals, strategies, and possible actions (Valley Water 2021). Goals and strategies for greenhouse gas emissions reduction and climate change adaptation include reducing fleet emissions, reducing equipment emissions, increasing energy efficiency, and efforts to improve demand management and water conservation. The CCAP is described in further detail in Section 3.9, Greenhouse Gas Emissions.

3.8.4 Impacts Assessment Methodology

The analysis addresses impacts that could occur from implementation of activities proposed as part of the program. Criteria air pollutant emissions are evaluated both quantitatively and qualitatively. Because the maintenance activities on specific pipelines would vary from year to year, emissions also would vary. To provide a quantitative basis for analyzing air quality impacts, emissions were estimated for a representative scenario of emissions across program activities. The modeled activity that was used as a conservative representative single activity was a 1-mile-long pipeline replacement. Pipeline replacement would be one of the more intensive activities completed under the PMP, other types of activities would likely be less intense. Specifically, pipeline replacement would involve ground disturbance, import and export of materials, and use of heavy construction equipment, and would be expected to require a longer duration than most other program activities to complete (weeks as opposed to days). Because of the additional equipment, haul trips, and duration, pipeline replacement would result in greater emissions than other program activities. The 1-mile length was selected as representative length; the potential impacts of longer pipeline replacements are also discussed qualitatively in the analysis below. Other PMP activities such as pipeline draining, inspections, and non-ground-disturbing activities would involve less equipment and vehicle travel and have a shorter duration, and therefore would have lower emissions than pipeline replacement.

With the exception of new backup generators, operational emissions from the updated PMP would not differ from the existing PMP. The updated PMP would not impact the intensity or frequency of operational activities, such as inspection, vehicle use, staffing, and replacements, and no net change in emissions would occur. Therefore, only operational emissions from the new permanent backup generators that may be installed and operated under the program were estimated quantitatively. Criteria air pollutant emissions from construction and backup generator operation were modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.19. Model outputs from CalEEMod are provided in Appendix J. Daily air pollutant emissions are reported and compared against the BAAQMD average daily emissions threshold.

Significance Criteria

The impacts of the program on air quality would be considered significant if they exceed the following standards of significance:

- **Impact AIR-1:** Conflict with or obstruct implementation of the applicable air quality plan.
- **Impact AIR-2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the program region is non-attainment under an applicable federal or state ambient air quality standard.
- **Impact AIR-3:** Expose sensitive receptors to substantial pollutant concentrations.
- **Impact AIR-4:** Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

For the criteria pollutant analyses, the thresholds of significance from BAAQMD's 2022 CEQA Air Quality Guidelines were applied, and these thresholds are discussed under Impact AIR-2. The BAAQMD thresholds of significance for local community risk and hazard impacts were applied to determine the program's potential to expose sensitive receptors to substantial pollutant concentrations, as discussed under Impact AIR-3.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's BMP Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Certain specific BMP conditions are included as part of the program, and the impact analyses were conducted assuming application of these practices and conditions. The following air quality-related BMP from Valley Water's BMP Handbook is applicable to the program:

- **BMP AQ-2:** Avoid Stockpiling Odorous Materials

The BMP Handbook also includes BMP AQ-1, which includes BAAQMD dust control measures. However, the BAAQMD CEQA Guidelines and dust control measures have been updated since Valley Water's BMP Handbook was adopted in 2014. Therefore, dust control measures have been updated and included as a program-specific AMM as AMM AIR-1, discussed below, to provide consistency with the updated BAAQMD CEQA Guidelines.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.4 of the Project Description, Valley Water would implement certain AMMs as part of the program to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMM applicable to air quality is shown in Table 3.8-6.

Table 3.8-6 Air Quality-Specific AMM

AMM No.	AMM Requirements
AMM AIR-1	**Implement BAAQMD Dust Control Measures.** Program activities will be conducted in accordance with current BAAQMD guidance regarding construction-related fugitive dust emissions. The following measures make up construction BMPs from the 2022 BAAQMD CEQA Air Quality Guidelines: 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 will be prohibited. 4. All vehicle speeds on unpaved roads will be limited to 15 miles per hour (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. All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph. 7. All trucks and equipment, including their tires, will be washed off before leaving the site. 8. Unpaved roads providing access to sites located 100 feet or further from a paved road will be treated with a 6- to 12-inch layer of compacted wood chips, mulch, or gravel. 9. Publicly visible signs will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number also will be visible, to ensure compliance with applicable regulations.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to air quality.

3.8.5 Impact Analysis

Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan (less than significant)

In determining consistency with the applicable air quality plan, the analysis considered whether the program would (1) support the primary goals of the plan, (2) include applicable control measures, if any, and (3) avoid disrupting or hindering implementation of control measures.

The vast majority of the program area falls within the SFBAAB, which is under the BAAQMD's jurisdiction. The BAAQMD thresholds and control measures are more conservative than those of SJVAPCD or MBARD (as shown in Table 3.8-3, Table 3.8-4, and Table 3.8-5). Therefore, the

analysis used thresholds from the BAAQMD to determine potential impacts on air quality. As discussed in Section 3.8.3, the most recently adopted air quality plan for the SFBAAB is the 2017 CAP, which includes 85 control measures aimed at reducing air pollution in the SFBAAB. The measures applicable to the program are transportation control measures and energy and climate control measures (the program's impacts with respect to GHG emissions are discussed in Section 3.9, Greenhouse Gas Emissions). Workers and contractors would commute throughout the program area, and heavy equipment and vehicles would be required to conduct various program activities. The 2017 CAP includes several transportation control measures that would be applicable to these activities, including the following:

- Provide incentives to purchase new trucks that exceed NOx emission standards, hybrid trucks, or zero-emission trucks (TR19).
- Provide incentives for early deployment of electric, Tier 3, and Tier 4 off-road engines used in construction, freight, and farm equipment TR22).

These transportation control measures are voluntary incentive measures and do not require vehicle upgrades or retrofits. Construction vehicles and equipment would comply with federal standards for vehicle fuel efficiency because all vehicles and machinery that are sold in the U.S. must meet those standards. Furthermore, as discussed in Section 3.9, Greenhouse Gas Emissions, Valley Water implements actions in accordance with the Valley Water CCAP and Ends Policies, such as increasing fleet efficiency, increasing use of renewable energy, reducing vehicle travel, and encouraging use of efficient equipment, which support the goals of the 2021 CAP. Where applicable to the PMP activities, these measures would be implemented by Valley Water or contractors as part of the program and would be consistent with the intent of the listed control measures. Thus, the use of vehicles and equipment proposed as part of the program would not conflict with these measures, and the program would not conflict with or obstruct implementation of the control measures that were identified to achieve the goals of the 2021 CAP.

Vehicles and equipment used to implement the activities proposed under the program would emit DPM and criteria air pollutants. As discussed in detail under Impact AIR-2, estimated emissions during implementation of the representative modeled scenario would not exceed the BAAQMD significance thresholds for particulate matter (PM_{10} and $PM_{2.5}$) and ozone precursors (NOx and ROG). Because other types of program activities would generate less vehicle and equipment emissions than the representative modeled scenario, emissions for other, less intense program activities would not be expected to exceed the BAAQMD thresholds. Furthermore, as part of the program, Valley Water would implement AMM AIR-1, which would require that dust control measures be implemented in accordance with current BAAQMD CEQA guidelines for controlling fugitive dust in the form of PM_{10} and $PM_{2.5}$. Therefore, program implementation would not conflict with or obstruct the strategies and goals of the 2017 CAP or any other applicable air plan. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact AIR-1.

Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the program region is non-attainment under an applicable federal or state ambient air quality standard (less than significant)

Most of the program area is within the SFBAAB, which is managed and regulated by the BAAQMD. The SJVAPCD and MBARD thresholds of significance are equal to or greater than the BAAQMD thresholds, so program emissions that do not exceed BAAQMD thresholds would also not exceed SJVAPCD or MBARD thresholds. Therefore, for simplicity, program emissions were compared against the 2022 BAAQMD CEQA Air Quality Guidelines thresholds. These thresholds are shown in Table 3.8-3 for construction- and operational-related criteria air pollutants and precursor emissions. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to SFBAAB's existing air quality conditions. If the program's average daily emission or total annual emission of construction or operational-related criteria air pollutants or precursors would exceed any applicable threshold of significance listed in Table 3.8-3, the impact would be cumulatively significant.

Program implementation would generate criteria air pollutant emissions from the use of tools, worker vehicles, and heavy equipment. Use of vehicles and equipment to mobilize to and demobilize from program work sites and conduct program activities would generate exhaust emissions. Fugitive dust would be generated from equipment and vehicle use on paved and unpaved roads, and from ground-disturbing activities.

The estimated modeled air emissions that would be generated from the representative modeled scenario of a 1-mile pipeline replacement are shown in Table 3.8-7. In the SFBAAB, the threshold is based on average daily emissions. In addition, construction emissions from routine tasks in maintaining the pipelines would remain consistent with current levels and the air pollutant emissions would thus not increase from baseline conditions.. While this analysis considered the emissions from a high intensity activity, construction emissions would not increase from baseline conditions.

Table 3.8-7 1-Mile Pipeline Replacement Scenario Construction Emissions

Pollutant/Precursor	SFBAAB Construction Thresholds Average Daily Emissions (pounds/day)	PMP Construction Emissions from Representative Modeled Scenario (pounds/day)[1]	Threshold Exceeded?
ROG	54	0.3	no
NOx	54	2.8	no
PM10 (exhaust)	82	0.1	no
PM2.5 (exhaust)	54	0.1	no
Fugitive Dust	best management practices	0.3	no

[1] *Appendix J*

Source: BAAQMD 2022

Construction-Related Emissions

Criteria Air Pollutants

Program construction activities would involve use of a variety of tools, worker vehicles, and heavy equipment that would generate criteria air pollutant emissions. As previously described, program emissions would vary, and most program tasks would be small-scale and not generate substantial air emissions. However, for this analysis, criteria air pollutant emissions were quantified for replacement for a 1-mile-long segment of buried pipeline, to provide a representative scenario for a single program activity and provide a point of comparison for annual program emissions. The total estimated air emissions that would be generated from this representative modeled scenario is shown in Table 3.8-7.

In the SFBAAB, the thresholds (shown in Table 3.8-3) are based on average daily emissions and the annual net emissions of PM_{10}, $PM_{2.5}$, as well as ROG and NOx precursors to ozone. The representative modeled scenario would not exceed the average daily emissions threshold for construction. For each criteria pollutant, the modeled emissions are equivalent to a small fraction of the threshold; the representative modeled scenario could occur numerous times in a single year without exceeding the thresholds. Because the representative pipeline replacement modeled scenario, which is the most intensive activity under the PMP, would not exceed the SFBAAB average daily thresholds for construction (and would be far below the average daily thresholds), the other program activities also would not exceed the thresholds. The timing of program activities would vary, and the potential would exist for up to three program tasks to occur at different locations in the program area concurrently, although would be very rare. However, because the estimated emissions for the representative modeled scenario are substantially lower than the significance thresholds, even if multiple program activities were being implemented concurrently, the emissions that would be generated from these activities is expected to be below the BAAQMD significance thresholds. For example, the modeled emissions for the pollutant that are closest to the BAAQMD threshold is for NOx (2.8 pounds per day emitted, with a threshold of 54 pounds per day). In order to exceed the threshold, 19 pipeline replacements would need to be ongoing concurrently, but the PMP would not involve

work at that level of intensity. On an annual basis, construction activity levels and associated emissions from routine pipeline maintenance would remain consistent with current activity and emissions levels because the program would not increase the frequency or intensity of maintenance and inspections. The program would thus not exceed any annual emissions threshold. Therefore, construction-related emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment. The impact would be **less than significant**.

Fugitive Dust

As discussed under Impact AIR-1, fugitive dust in the form of PM_{10} and $PM_{2.5}$ would be generated from construction equipment and vehicle use on paved and unpaved roads and from ground-disturbing activities. To control fugitive dust, Valley Water would implement AMM AIR-1, requiring implementation of dust control measures in compliance with the 2022 BAAQMD CEQA Air Quality Guidelines. These measures would include routine watering of exposed surfaces where construction equipment and vehicle use would occur, covering haul trucks transporting loss sediment and materials, removal of visible mud or dirt track-out on public roads, and limiting vehicle speeds on unpaved roads. With implementation of these measures, the BAAQMD threshold for fugitive dust would not be exceeded. The impact would be **less than significant**.

Operational-Related Emissions

Similar to the existing PMP, the updated PMP would involve inspection and maintenance of existing pipelines and related infrastructure to support ongoing operations. These activities would include routine inspections as well as maintenance of valves, fittings, pumps, motors, and other mechanical components. Operational emissions generated by these types of operational activities under the updated PMP would be equivalent to those generated by implementation of the existing PMP, and therefore would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in non-attainment.

The updated PMP may include installation and operation of up to 20 new permanent diesel generators, dispersed throughout the program area to provide backup power to program facilities. As with the existing generators at program facilities, the new backup generators would not be operated continuously; they would be operated during emergencies and for periodic testing (e.g., monthly). The backup generators would have an estimated horsepower of 10 to 20 kilowatts and would be powered by diesel from an on-site storage tank. The tank is sized to need refueling approximately every 10-12 hours, typically not running over 24-hours without refueling. The operational emissions of a single generator were calculated using CalEEMod and are summarized in Table 3.8-8. As shown in the table, the estimated emissions would not exceed the thresholds of significance for any criteria pollutants. The impact would be **less than significant**.

Table 3.8-8 Operation Emissions from New Backup Generators

Pollutant/Precursor	SFBAAB Operational Thresholds Average Daily Emissions (pounds/day)	Operational Threshold Annual Average Emissions (tons/year)	PMP Modeled Emissions from New Backup Generators (pounds/day)[1]	PMP Modeled Emissions from New Backup Generators (tons/year)[1]	Threshold Exceeded?
ROG	54	10	0.4	0.1	no
NOx	54	10	1.9	0.3	no
PM10	82	15	0.2	<0.05	no
PM2.5	54	10	0.2	<0.05	no
Fugitive Dust	none	none	0	0	no

[1] *See Appendix J*

Source: BAAQMD 2022

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact AIR-2.

Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations (less than significant)

The BAAQMD and MBACD have established thresholds of significance for local community risk and hazard impacts, which apply to siting a new source of air pollution. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. However, the BAAQMD advises that the TAC thresholds are not mandatory, and agencies should apply them only after determining that they reflect an appropriate measure of a project's impacts. If a proposed project's emissions of TACs or $PM_{2.5}$ exceed any of the following thresholds of significance, the project would result in a significant impact:

- Non-compliance with a qualified risk reduction plan; or
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0; or
    - An incremental increase of greater than 0.3 microgram per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$.

A proposed project would have a cumulatively considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source plus the contribution from the project exceeds the following:

- Non-compliance with a qualified risk reduction plan; or
- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
  - 0.8 μg/m^3 annual average $PM_{2.5}$.

The SJVAPCD considers TAC emissions to be significant if a project would result in:

- cancer risk equal or greater to 10 in one million for a maximally exposed receptor;
- acute: has a hazard index equal or exceeding 1 for the maximally exposed individual; or
- chronic: hazard index equals of exceed 1 or the maximally exposed individual.

The MBUAPCD considers emissions of a carcinogenic TAC that can result in a cancer risk greater than one incident per 100,000 (equivalent to 10 in one million) as significant (MBUAPCD 2016).

The thresholds of significance are designed to ensure that individual projects do not create a significant adverse impact on the air quality and that no sensitive receptor endures a significant adverse effect.

Criteria Pollutants
As analyzed under Impact AIR-2, average daily emissions of particulate matter (PM_{10} and $PM_{2.5}$) and precursors to the formation of ozone (NOx and ROG) generated by program activities would not exceed criteria pollutant significance thresholds. Therefore, emissions of these pollutants would not be exceeded for local community risk and hazard impacts. The impact would be **less than significant**.

Diesel Particulate Matter
Program activities would also result in emissions of DPM, a TAC, from heavy construction equipment and other heavy trucks such as haul trucks and water trucks. New backup generators would also be a source of TAC; however, the new backup generators would not be operated continuously; they would be operated during emergencies and for periodic testing (e.g., monthly). Many program pipelines traverse residential land uses with various types of sensitive receptors present throughout the program area (e.g., hospitals, day care facilities, residences). Therefore, the use of heavy construction equipment and trucks may be required within 1,000 feet of a variety of sensitive receptors, which is the area of effect for analysis of health risks in accordance with the BAAQMD Guidelines (BAAQMD 2022). However, health risk assessments for DPM are typically based on 9-, 30-, and 70-year exposure periods (OEHHA 2015). The duration of use for heavy construction equipment and trucks would vary by program activity but would generally be short term, ranging from an hour to a few weeks. The

backup generators would also not be operated routinely and would only be operated when line power is not available and during testing. Furthermore, use of construction equipment and trucks would occur dispersed throughout the program area and would not re-occur in the same locations with any frequency, because of the designed lifespan of pipelines and related infrastructure. Because of the short-term exposure, infrequent occurrence at any one program work site in the program area, and highly variable nature of DPM emissions associated with program activities, exposure to DPM, including for sensitive receptors, would be well below the exposure period of concern. Therefore, BAAQMD significance thresholds for TACs and $PM_{2.5}$ concentrations would not be exceeded, and the exposure of persons to DPM generated by the program would be a **less than significant impact**.

Naturally Occurring Asbestos

As discussed in Section 3.8.2, and in Section 3.4, Hazards and Hazardous Materials, program pipelines traverse or are adjacent to scattered areas known to contain NOA, particularly areas in the central and southern portions of Santa Clara Valley. Small segments of four program pipelines bisect or are immediately adjacent to areas containing NOA, including Snell Pipeline, Santa Teresa Tunnel, Santa Teresa Force Main, and Cross Valley Pipeline. Access roads used for ingress and egress to program work sites may also cross areas of NOA. Program-related ground disturbance (e.g., excavation for pipeline repair, grading for access road maintenance in these areas) could cause the asbestos fibers to become airborne, which could pose significant health risks to workers and nearby individuals if inhaled.

Valley Water and its contractors would comply with applicable federal, State, and local regulations, including CARB's ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. For construction and grading projects that will disturb 1 acre or less, the ATCM requires several specific actions to minimize emissions of dust, such as vehicle speed limitations, application of water before and during the ground disturbance, keeping storage piles wet or covered, and track-out prevention and removal. Construction projects that will disturb more than 1 acre must prepare and obtain the BAAQMD's approval of an asbestos dust mitigation plan. The plan must specify how the operation will minimize emissions and must address specific emission sources. This ATCM also stipulates that activities must not result in visible emissions crossing the property line, regardless of the size of the disturbance.

Furthermore, compliance with BAAQMD Regulation 11, Rule 2 would require Valley Water and its contractors to implement specific disposal methods for asbestos-containing material (e.g., if asbestos is encountered around pipelines). As part of the program, Valley Water would also implement AMM AIR-1, which would require implementation of various dust control measures to reduce dust (including airborne asbestos) at program work sites and during sediment transport. Compliance with applicable regulations and implementation of AMMs would reduce the program's potential to expose sensitive receptors to airborne asbestos. The impact would be **less than significant**.

Significance Determination

Less than Significant

Mitigation
No mitigation would be required for Impact AIR-3.

Impact AIR-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (less than significant)

Program implementation would involve use of diesel-powered equipment and vehicles, which would generate some odors, as well as possibly include temporary stockpiling of potentially odorous soils. Odors could temporarily increase in the immediate vicinity of the equipment operation. The odors would dissipate rapidly with distance from the odor-generating activity. The generation of odors from use of diesel engines and paving activities would not be substantial or permanent. The potential odors from temporary stockpiling of soils would be minimized with implementation of BMP AQ-2, which would avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses; and by disposing odor stockpiles at appropriate landfills. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact AIR-4.

3.9 Greenhouse Gas Emissions

This section provides an overview of the GHG emissions potential in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts related to GHG emissions from program implementation.

3.9.1 Environmental Setting

Overview

GHG emissions are global pollutants that contribute to global impacts. Therefore, the program study area for GHG emissions is inherently cumulative. The environmental setting related to GHG emissions includes a summary of current climate change effects of GHG emissions and represents the existing conditions of GHG and energy resources in the study area. This setting is also referred to as the current (2023) baseline conditions, although some environmental setting information is based on older studies or data that are nevertheless representative of 2023 conditions. It forms the basis for comparison of program impacts.

Climate Change and Greenhouse Gases

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of Earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHG emissions, particularly those generated from the production and use of fossil fuels (BAAQMD 2017). Although climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and the World Meteorological Organization in 1988 has led to increased efforts being devoted to GHG emissions reductions and climate change research and policy. These efforts are concerned primarily with GHG emissions that are generated by human activity, which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases (including tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, fluoroform (HFC-23), 1,1,1,2-tetrafluoroethane (HFC-134a), and difluoroethane (HFC-152a). These anthropogenic (human caused) GHG emissions in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of Earth's climate, known as global climate change.

The standard unit for quantifying GHG emissions is carbon dioxide equivalent (CO_2e), which expresses the impact of different GHGs as standardized to the mass of CO_2 that would result in the same amount of warming. CO_2e is calculated by multiplying the mass of a specific GHG by its global warming potential. Global warming potential expresses how much heat a GHG traps in the atmosphere over a specific amount of time compared to CO_2. All GHG emissions in this section are presented as CO_2e.

In the U.S., the main source of GHG emissions is transportation, which made up 28 percent of GHG emissions in 2021, followed by electricity generation (25 percent) and industry (23 percent) (USEPA 2023c). In California, transportation sources (including passenger cars, light-

duty trucks, other trucks, buses, and motorcycles) make up a larger share of GHG-emitting sources (38 percent), followed by industrial sources at 23 percent. Electricity generation (in-state and imported) makes up 16 percent of GHG emissions in California (CARB 2023b). The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

Greenhouse Gas Emission Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes recent information on global, national, California, and local GHG emissions inventories.

Global Emissions

Worldwide GHG emissions in 2022 were 36.8 billion metric tons (MT) of CO_2e (International Energy Agency, n.d.). Global estimates are compiled by the International Energy Agency from a variety of sources, including real-time data from power system operators and statistical releases from national administrations.

Federal Emissions

In 2021, total U.S. GHG emissions were 6,340 million MT CO_2e (USEPA 2023b). Total U.S. GHG emissions increased by 2 percent from 1990 to 2021, down from a high of 16 percent above 1990 levels in 2007 (USEPA 2023a). GHG emissions increased from 2020 to 2021 by 5.2 percent (314.3 million MT CO_2e). Net GHG emissions (including sinks) were 5,586 million MT CO_2e. Overall, net GHG emissions increased 6.4 percent from 2020 to 2021 and decreased 16.6 percent from 2005 levels. From 2019 to 2020, a sharp decline occurred in GHG emissions, mainly because of the impacts of the COVID-19 pandemic on travel and other economic activity. Between 2020 and 2021, the increase in total GHG emissions was driven mainly by an increase in CO_2 emissions from fossil fuel combustion, because of economic activity rebounding after the height of the COVID-19 pandemic (USEPA 2023a).

California Emissions

California uses the annual statewide GHG emissions inventory to track progress toward meeting statewide GHG emissions targets. In 2018, GHG emissions activities statewide were 369 million MT CO_2e (CARB 2022a), 35 million MT CO_2e lower than 2019 levels and 62 million MT CO_2e below the 2020 GHG emissions target of 431 million MT CO_2e (CARB 2022a). The 2019 to 2020 decrease in GHG emissions was likely was related to the impacts of the COVID-19 pandemic, and forthcoming data for more recent years is anticipated to show increases in GHG emissions related to economic recovery from the pandemic (CARB 2022a). GHG emissions also vary from year to year, depending on the weather and other factors, but the State will continue to implement its GHG emissions reductions program, to remain on track to meet its climate targets. These reductions occur while California's economy grows and continues to generate jobs. From 2000 to 2020, the carbon intensity of California's economy decreased by 49 percent, while the gross domestic product increased by 56 percent (CARB 2022a).

Santa Clara County

For GHG emissions just from Santa Clara County's operations, the most recent greenhouse gas inventory (Santa Clara County 2021) is provided for 2019 and considers GHG emissions associated with County operations. The 2019 inventory includes activity and GHG emissions broken down into the following sectors: buildings and facilities, employee commutes, fleet vehicles, reimbursed employee miles, solid waste, and closed landfills. Vehicle emissions associated with employee commutes made up the majority of operational emissions (61 percent), followed by buildings and facilities (26 percent). Overall GHG emissions in 2019 decreased by 18 percent from 2015 and 11 percent from 2010.

In 2023, Santa Clara County completed a community-wide GHG emissions inventory and forecast, which includes all city jurisdictions in the county. The inventory compiled data from 2017, the most recent year with reliable and consistent data. Table 3.9-1 summarizes the results of the GHG emissions inventory. County-wide, the on-road transportation sector, including passenger and commercial vehicle miles traveled (VMT), accounted for almost half of GHG emissions. Residential and commercial natural gas were also large GHG emissions sources, followed by commercial electricity, waste, residential electricity, water, and wastewater (Santa Clara County 2023).

Santa Clara Valley Water District

Valley Water calculates GHG emissions inventories annually, to evaluate progress toward carbon neutrality. The most current inventory is included in Valley Water's Climate Change Action Plan (CCAP) (Valley Water 2021). Valley Water inventoried operational GHG emissions, including Scope 1 (direct emissions), Scope 2 (purchased electricity), and Scope 3 (indirect emissions, such as imported water and employee commutes). Carbon neutrality is measured each year and based on the most recent data; Valley Water has been successful in achieving carbon neutrality since 2014. In each of these years, Valley Water's quantity of offset or sequestered GHG emissions was greater than the quantity of reported GHG emissions (Valley Water 2021). Although Valley Water currently achieves carbon neutrality for its operations, some sources of GHG emissions, such as construction-related GHG emissions, are not accounted for in the carbon neutrality calculations. However, Valley Water has identified construction and other GHG emissions sources as concerns and has strategies in place to continue to reduce them, including those associated with construction.

Table 3.9-1 Santa Clara County 2017 GHG Emissions Inventory Summary

GHG Emissions Sector	County Emissions (MT CO_2e)	Percent of Total
Residential Electricity	357,750.48	3.3
Commercial Electricity	2,020,766.29	18.7
Residential Natural Gas	1,205,905.66	11.1
Commercial Natural Gas	1,214,603.56	11.2
Passenger VMT	3,868,363.75	35.7
Commercial VMT	984,541.62	9.1

GHG Emissions Sector	County Emissions (MT CO_2e)	Percent of Total
Off-Road VMT	503,816.20	4.7
Waste	574,003.34	5.3
Water	34,912.25	0.3
Wastewater	12,880.46	0.1
Agriculture	53,593.87	0.5
Total	**10,831,137.48**	**100**
Per Capita Emissions		
Population (2017)	1,942,176	--
Per Capita Emissions (MT CO_2e/person)	**5.58**	**--**

Source: Santa Clara County 2023

Table 3.9-2 summarizes Valley Water's estimated GHG emissions and offsets from 2010 to 2017 (the most recent years with available inventory data) (Valley Water 2021). GHG emissions include Scope 1, 2, and 3 emissions. Reductions and sequestrations come from Valley Water's water conservation program, recycled water, carbon sequestration, green business program, and energy optimization measures.

Table 3.9-2 Valley Water GHG Emissions and Reductions Inventory

Calendar Year	2010	2011	2012	2013	2014	2015	2016	2017
Emissions in MT CO_2e	22,100	21,800	29,800	29,700	18,500	22,200	16,200	15,300
Reduction/ Sequestration	22,370	23,060	24,400	23,110	24,080	24,235	19,135	19,235
Carbon Neutrality (positive value indicates exceeding neutrality)	270	1,260	-5,400	-6,590	5,580	2,035	2,935	3,935

Source: Valley Water 2021

3.9.2 Regulatory Framework

Federal Regulations, Policies, and Standards

Supreme Court Ruling in *Massachusetts et al. v. Environmental Protection Agency*

The USEPA is the federal agency responsible for implementing the federal CAA and its amendments. The U.S. Supreme Court ruled in 2007 that CO_2 is an air pollutant as defined under the CAA, and that USEPA has the authority to regulate GHG emissions (*Massachusetts v. USEPA* [2007] 549 U.S. 497). The ruling in this case resulted in USEPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

The National Highway Traffic Safety Administration (NHTSA) and USEPA set the Corporate Average Fuel Economy (CAFE) standards to improve the average fuel economy and reduce GHG emissions that are generated by cars and light-duty trucks. In 2018, NHTSA and USEPA

proposed to amend the fuel efficiency standards for passenger cars and light trucks and establish new standards covering model years 2021 through 2026 by maintaining the model year 2020 standards through 2026 (Safer Affordable Fuel-Efficient [SAFE] Vehicles Rule). As part of the SAFE Vehicles Rule, NHTSA and USEPA also issued a regulation revoking California's CAA waiver, which allows California to set its own GHG emissions standards, asserting that the waiver was pre-empted by federal law (SAFE Rule Part One, 84 Federal Register 51310, September 27, 2019). Part One of the SAFE Vehicles Rule went into effect on November 26, 2019, and was the subject of litigation. Subsequently, USEPA reconsidered the SAFE rule and as of March 14, 2022, USEPA rescinded Part One of the SAFE Vehicles Rule, once again allowing California to enforce its own GHG emissions standards.

SAFE Rule Part Two was finalized on March 31, 2020, and it went into effect on June 29, 2020. Part Two of the SAFE Rule sets the CAFE standards to increase in stringency by 1.5 percent per year above model year 2020 levels for model years 2021–2026. These standards are lower than the previous CAFE standards, which required that model years 2021–2026 increase in stringency by 5 percent per year. In 2021, the EPA finalized GHG emission standards for light-duty vehicles, model years 2023–2026. The standards will increase in stringency each year, include footprint-based curves for both passenger cars and trucks, and include temporary flexibilities to address the lead time of the standards and to encourage the production of vehicles with zero- or near-zero emissions technology.

State Regulations, Policies, and Standards

California Air Resources Board

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs. Currently, no State regulations establish ambient air quality standards for GHG emissions. However, California has passed laws directing CARB to develop actions to reduce GHG emissions, and several State legislative actions related to climate change and GHG emissions have come into play in the past decade.

Advanced Clean Cars Program and Zero Emission Vehicle Program

AB 1493 of 2002 (known as Pavley I, Chapter 200, Statutes of 2002) provided the nation's first GHG emissions standards for automobiles. AB 1493 required CARB to adopt vehicle standards that lowered GHG emissions from new light-duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards, referred to as the Advanced Clean Cars (ACC) Program's Low Emission Vehicle (LEV) III Regulation, was adopted for vehicle model years 2017–2025 in 2012 (13 CCR Section 1900 et seq.).

The ACC Program also includes the Zero Emission Vehicle Program and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program was designed to achieve California's long-term GHG emissions reductions goals by requiring manufacturers to offer for sale specific numbers of zero-emission vehicles (ZEVs), including battery electric, fuel cell, and plug-in hybrid electric vehicles. The Clean Fuels Outlet regulation was intended to ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of new advanced technology vehicles as they come to market (CARB 2023a).

Executive Order S-3-05
In 2005, Executive Order (EO) S-3-05 was adopted and proclaimed that California is vulnerable to the impacts of climate change. It declared that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emissions reductions goals for the state. Specifically, statewide GHG emissions were to be reduced to 2000 levels by 2010, 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32, the California Global Warming Solutions Act
In 2006, the California Global Warming Solutions Act, AB 32, was enacted. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and puts a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020.

Senate Bill 32
Senate Bill (SB) 32 was enacted in 2016 and serves to extend California's GHG emissions reductions programs beyond 2020. SB 32 amended the Health and Safety Code, to include Section 38566, which contains language to authorize CARB to achieve statewide GHG emissions reductions of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets that were established by EO B-30-15 for 2030.

Executive Order B-55-18
In 2018, EO B-55-18 established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This EO directs CARB to ensure that future climate change scoping plans identify and recommend measures to achieve the carbon neutrality goal.

Assembly Bill 1279 and 2022 Climate Change Scoping Plan
The State Legislature enacted AB 1279, the California Climate Crisis Act, in 2022. AB 1279 establishes the State's policy to achieve net-zero GHG emissions as soon as possible but no later than 2045, and to achieve and maintain net-negative GHG emissions thereafter. Furthermore AB 1279 mandates that by 2045, statewide anthropogenic GHG emissions are to be reduced at least 85 percent below 1990 levels. SB 1279 also requires CARB to ensure that the Scoping Plan identifies and recommends measures to achieve carbon neutrality, and to identify and implement policies and strategies for CO_2 removal solutions and carbon capture, utilization, and storage technologies.

The 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) (CARB 2022) responded to AB 1279, outlining a strategy to achieve the State's climate target of reducing anthropogenic GHG emissions to 85 percent below 1990 levels by 2045, and to achieve carbon neutrality by 2045 or earlier. The 2022 Scoping Plan outlines the strategies that the State will implement to achieve carbon neutrality by reducing GHG emissions to meet the anthropogenic target, and by expanding actions to capture and store carbon through the State's natural and working lands and using a variety of mechanical approaches. The major element of the 2022

Scoping Plan is the decarbonization of every sector of the economy, including rapidly moving to zero-emissions transportation for cars, buses, trains, and trucks.

Appendix E of the 2022 Scoping Plan provides guidance for GHG emissions analyses in local agency CEQA documents. The guidance is focused on land use plans and projects, but some of it also can be applied to water and infrastructure projects. In particular, Section 3.2.2 generally endorses a net-zero threshold of significance, while noting that it may not be feasible or appropriate for every project.

California Renewables Portfolio Standard

The California Renewables Portfolio Standard initially required all California utilities to generate 33 percent of their electricity from renewables by 2020. In 2018, SB 100 set a three-stage compliance period, requiring all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, to generate 52 percent of their electricity from renewables by December 31, 2027; 60 percent by December 31, 2030; and 100 percent by December 31, 2045.

Pacheco State Park General Plan

The General Plan for Pacheco State Park identifies the long-term vision and goals for the park and provides guidelines for protecting park resources (California Department of Parks and Recreation 2006). The General Plan does not include goals or policies applicable to GHG.

State CEQA Guidelines

Section 15064.4 of the State CEQA Guidelines addresses the significance of GHG emissions. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG emissions impacts should include consideration of: (1) the extent to which a project may increase or reduce GHG emissions, (2) whether project emissions would exceed a locally applicable threshold of significance, and (3) the extent to which a project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The State CEQA Guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements which would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (State CEQA Guidelines Section 15064[h][3]). However, the State CEQA Guidelines do not set a numerical threshold of significance for GHG emissions.

The State CEQA Guidelines also include the following guidance on measures to mitigate GHG emissions when such emissions are found to be significant. Consistent with Section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of GHG emissions.

Measures to mitigate the significant effects of GHG emissions may include:

1. Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
2. Reductions in emissions resulting from a project through implementation of project features, project design, or other measures;
3. Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;
4. Measures that sequester GHGs; and
5. In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of GHG emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions. (State CEQA Guidelines Section 15126.4(c)).

Local Regulations, Policies, and Standards

BAAQMD 2022 CEQA Guidelines

In 2022, the Bay Area Air Quality Management District (BAAQMD) adopted its 2022 CEQA Guidelines, which updated and superseded the previous BAAQMD 2017 CEQA Guidelines. The 2022 CEQA Guidelines provide the BAAQMD-recommended procedures for evaluating climate impacts in CEQA documents.

The 2022 BAAQMD CEQA Guidelines recommend GHG emissions thresholds of significance for land use plans and projects and stationary sources, but do not recommend GHG emissions thresholds of significance for non-stationary sources and other activities directly relevant to the program (i.e., construction and ongoing maintenance activities for water projects, such as pipelines).

The BAAQMD 2022 CEQA Guidelines do not contain thresholds of significance for construction activities as they are temporary and variable. However, BAAQMD does recommend that the lead agency quantify and disclose GHG emissions that would occur during construction. Even though the significance of construction related GHG emissions is not determined, to minimize GHG emissions and emissions of other air quality pollutants, BAAQMD recommends that projects should incorporate best management practices for reducing GHG emissions (Table 6-1 in the 2022 BAAQMD CEQA Guidelines) (BAAQMD 2022).

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the primary agency responsible for addressing air quality and GHG emissions concerns in Merced County. The SJVAPCD provides guidelines and recommends methods for analyzing GHG emissions in CEQA analyses. The SJVAPCD has developed GHG emissions guidance for land use projects and certain stationary sources (not including backup generators); thus, their GHG guidance is not applicable to the program.

Monterey Bay Air Resources District

San Benito County is included in the Monterey Bay Air Resources District (MBARD, formerly the Monterey Bay Unified Air Pollution Control District [MBUAPCD]). MBARD has developed thresholds of significance for stationary source GHG emissions and requires all projects to comply with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation of GHG emissions. A proposed stationary source project will not have a significant GHG emissions impact, if project operation will emit less than the significance level of 10,000 MT CO_2e per year, or if the project will comply with a qualified plan for reduction or mitigation of GHG emissions in accordance with Section 15064.4(b)(3) and 15183.5(b) (MBUAPCD 2016). MBARD has not established GHG emissions thresholds for other emissions sources (e.g., construction emissions).

Valley Water Climate Change Action Plan

Valley Water's CCAP builds on Valley Water's existing climate change efforts, by identifying the ways in which Valley Water and Santa Clara County are vulnerable to climate change and providing goals, strategies, and possible actions (Valley Water 2021). Relevant goals and strategies are as follows:

Goal 1. Reduce Direct Greenhous Gas Emissions

1.1 Strategy 1. Reduce GHG emissions associated with the Valley Water fleet.

Action 1.1.1. Continue adding Electric Vehicles or other fuel-efficient vehicles to fleet, as stated by existing Board policy I-EL-5.11.a. xi.

Action 1.1.4. Expand the use of Valley Water pool vehicle(s) and evaluate feasibility of having additional Valley Water pool vehicles available for employee work-use at south county facility (and at future drop-in locations if they are created).

Action 1.1.5. Support the replacement or addition of high fuel efficiency and low emission vehicles when such choice is cost-effective and meets performance requirements.

1.2 Strategy 2. Reduce GHG emissions from trips between Valley Water offices and work sites.

Action 1.2.2. Ensure that maintenance routes are optimized to minimize GHG emissions.

Action 1.2.3. Develop a Valley Water-wide soil management plan to reduce truck hauling trips and encourage more efficient use of sediment/soil/spoils.

Action 1.2.6. Improve awareness of existing off-road diesel engine idling policy and consider expanding idling policy to other vehicles.

Action 1.2.7. Promote fuel-saving policies and protocols such as, when safe, limiting hard braking while driving Valley Water vehicles, etc.

***1.3 Strategy** 3.* Reduce GHG emissions associated with Valley Water-owned equipment.

Action 1.3.1. Replace diesel forklifts with electric forklifts (currently 60% of forklifts are electric)

Action 1.3.2. Update diesel engines to comply with the Tier 4 diesel emissions government mandate. (Currently, Valley Water is one year ahead of the mandate's schedule).

Action 1.3.3. Continue to replace less efficient equipment with more fuel-efficient Class 4 equipment (ex. generators, boats, other equipment, etc.) or devices that are powered by renewable energy (e.g., solar powered gages and monitoring devices).

Action 1.3.5. Promote use of renewable energy for Valley Water field monitoring equipment.

1.4 Strategy 4. Minimize GHG emissions associated with planning, design, construction, operation, and maintenance of capital projects.

Action 1.4.1. Incorporate new energy, water, and fuel efficient technologies into capital project planning and design. Minimize construction-related vehicle miles traveled.

Action 1.4.2. Update internal capital project work instructions to incorporate GHG reduction measures, such as LEED/ Envision certification elements, and considerations for continued maintenance with input from capital project staff and O&M staff.

Action 1.4.3. Provide recommendations to change internal capital project specifications through the Technical Review Committee to reduce GHGs and add fleet and equipment specifications for contractors.

Goal 2. Expand Renewable Energy Portfolio and Improve Energy Efficiency

2.1 Strategy 1. Increase the percentage of renewable energy in the agency's energy portfolio.

2.2 Strategy 2. Improve energy efficiency at agency facilities.

Goal 3. Reduce Indirect GHG Emissions

Goal 4. Water Supply Adaptation

4.2 Strategy 2. Improve demand management and increase water conservation efforts.

Action 4.2.1. Support programs to reduce pipeline leakage.

4.6 Strategy 6. Increase flexibility and resilience of water utility operations and assets.

Valley Water Board of Directors Policies

Valley Water also maintains governance policies of the Board of Directors, known as Ends Policies. Policy E-5 includes the following goal and objectives related to energy efficiency and renewable energy:

Goal 5.1. Minimize greenhouse gas emissions from Valley Water's operations.

Objective 5.1.1. Expand the use of clean technology in vehicles, equipment, and buildings, and develop carbon-efficient construction and service delivery practices.

Objective 5.1.2. Optimize energy use and expand renewable energy portfolio.

Objective 5.1.3. Incentivize low carbon practices, projects, and efforts by employees, contractors, and partners.

Goal 5.2. Adapt Valley Water's assets and operations to reduce climate change impacts.

Objective 5.2.1 Improve the resiliency of Santa Clara County's water supply to drought and other climate change impacts.

3.9.3 Impacts Assessment Methodology

This analysis qualitatively addresses GHG emissions that could occur from the ongoing activities associated with the updated PMP, including access and vehicle travel to work sites, and inspection and maintenance activities. The GHG emissions were assessed against the emissions currently generated under baseline conditions, which would comprise activities currently performed under the existing PMP as of 2023. The analysis also quantitatively addresses the program's potential GHG emissions related to new stationary sources.

Emissions Generation

The BAAQMD 2022 CEQA Guidelines do not contain thresholds of significance for construction activities (BAAQMD 2022)but do include recommended BMPs to reduce GHG emissions during construction (as summarized in Section 3.9.2, above). While BAAQMD does not have a recommended numerical threshold for evaluating construction generated GHG emissions, a nearby air district, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has developed a quantitative screening level for assessing construction emissions. SMAQMD supports the use of a 1,100 $MTCO_2e$/year screening level for all construction projects, based on substantial evidence (SMAQMD 2021). The BAAQMD's operational GHG emissions were developed for residential and commercial land use projects and have been modified slightly to apply to the program's operational GHG emissions by considering the type of project. The following thresholds were used to evaluate the significance of the program:

The program would result in wasteful, inefficient, or unnecessary energy, especially nonrenewable energy, usage as determined by the analysis required under Sections 21100(b)(3) and 15126.2(b) of the State CEQA Guidelines.

Stationary Sources:
The program would site new stationary sources that would generate more than 10,000 MT CO_2e per year.

GHG Emissions Reductions Plan Consistency

The following qualitative threshold was used to evaluate the significance of the GHG emissions reductions plan consistency impacts resulting from program implementation.

Construction and operation of equipment, and vehicles would not adhere to the GHG emissions targets, measures, and guidance included in SB 32, AB 1279, BAAQMD 2017 Clean Air Plan, CARB 2022 Scoping Plan, and/or Valley Water's CCAP.

Significance Criteria

The impacts of the PMP related to GHG emissions would be considered significant if they would exceed the following standards of significance:

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's Best Management Practices Handbook does not contain any GHG-related best management practices applicable to the PMP.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.4 of the Project Description, Valley Water would implement certain AMMs as part of the program to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMM applicable to air quality is shown in Table 3.9-3.

Table 3.9-3 Greenhouse Gas Emissions Related AMMs

AMM No.	AMM Requirements
AMM GHG-1	**GHG Efficient Equipment.** Use zero-emission and hybrid-powered equipment to the greatest extent possible, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area or AB 617 community (BAAQMD 2022). This applies to both Valley Water owned and contractor vehicles.
AMM GHG-2	**Limiting Portable Generators.** Where grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills, and compressors, and use electric tools whenever feasible. (BAAQMD 2022)

AMM No.	AMM Requirements
AMM GHG-3	**Carpool Encouragement.** Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers and offer meal options onsite or shuttles to nearby meal destinations for construction employees. (BAAQMD 2022)

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to greenhouse gas emissions.

3.9.4 Impact Analysis

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment (less than significant)

The program activities were considered to be operational in nature because they would consist of continuing the ongoing routine tasks in maintaining pipelines. Therefore, the program's contributions to GHG emissions would be significant if they would conflict with operational thresholds set forth in the BAAQMD 2022 CEQA Guidelines (as described above), related to mobile emissions, and stationary sources. Construction emissions resulting from the ongoing routine tasks in maintaining the pipelines would be considered significant if they exceeded the SMAQMD 1,100 $MTCO_2e$/year threshold.

The program would generate GHG emissions from the use of vehicles to transport workers to program work sites, periodic use of construction equipment, and testing and potential use of backup generators. The type and intensity of program activities under the program would continue to be comparable to the activities that are ongoing under the existing PMP. For example, the updated PMP would include activities such as ground-disturbing work and replacing pipeline appurtenances and sections. These types of activities already are completed routinely under the existing PMP, and thus the updated PMP would not change Valley Water's maintenance activities or generate an associated increase in GHG emissions. Similarly, Valley Water's recycled water pipelines would be included in the updated PMP. Although the recycled water pipelines are not included in the existing PMP, maintenance of these recycled water facilities is already ongoing under separate Valley Water programs and the updated PMP seeks to consolidate their maintenance under the PMP. Construction emissions from routine tasks in maintaining the pipelines would remain consistent with current levels and the GHG emissions would thus not increase from baseline conditions. In addition, the total equipment use and activity levels for the program documented in Appendix J would be less than the equipment use and activity levels for the Coyote Creek Flood Protection Project, where detailed GHG modeling demonstrated the emissions would be less than the SMAQMD threshold of 1,100 MTCO2e/year. (Valley Water 2024). Therefore the SMAQMD 1,100 $MTCO_2e$/year threshold would not be exceeded. Additional GHG reductions would be achieved by implementation of applicable BAAQMD BMPs as Program specific AMMs. AMM GHG-1 would require the use of

zero-emission and hybrid-powered equipment to the greatest extent possible. This would include Valley Water owned and contractor vehicles. AMM GHG-2 would limit the use of portable diesel engines, typically generators, and provide electrical hookups where feasible. AMM GHG-3 would encourage and provide carpools options for construction employees.

The program would not construct new buildings or install new natural gas appliances or plumbing. The program also would not result in wasteful, inefficient, or unnecessary energy usage, as described in Section 3.11, Energy. Therefore, the program would not conflict with the BAAQMD 2022 CEQA Guidelines for buildings, appliances, or equipment.

The program would include maintenance activities for existing and potential new backup generators. Existing backup generators would be tested, maintained, and also may be replaced; these activities would not differ from Valley Water's ongoing maintenance activities for existing generators. Therefore, GHG emissions from existing backup generators would not change with implementation of the updated PMP. The updated PMP also would include installation of up to approximately 20 new backup generators. New generators are anticipated to be installed in conjunction with other program activities, such as installation of electrically actuated valves that would require a backup power source. The new backup generators would be installed over a period of approximately 15 to 20 years and would typically be sized at approximately 10 to 20 kW. To compare GHG emissions from new backup generators against the BAAQMD threshold, generator GHG emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.19. Per BAAQMD guidance (BAAQMD 2022), GHG emissions modeling assumed 100 hours of operation per year for each generator. A single backup generator would emit approximately 1 MT CO_2e per year. In total, the approximately 20 new backup generators associated with the updated PMP would emit approximately 20 MT CO_2e per year, which would not exceed the BAAQMD's threshold of 10,000 MT CO_2e per year for new stationary sources. Therefore, the updated PMP would not conflict with the BAAQMD's stationary source significance thresholds for GHG emissions. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact GHG-1.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (less than significant)

Plans and policies adopted for reducing GHG emissions in the program area would include SB 32, AB 1279, the CARB 2022 Scoping Plan, the BAAQMD 2022 CEQA Guidelines, and the Valley Water CCAP. The program consistency with these plans and policies was evaluated to determine whether the program would conflict with an applicable plan, policy, or regulation adopted for reducing GHG emissions.

Senate Bill 32
SB 32 set a goal to achieve GHG emissions reductions of 40 percent below 1990 levels by 2030. As described under Impact GHG-1, the updated PMP's GHG emissions would be equivalent to the existing PMP's GHG emissions, with a minor net increase associated with operation of the new backup generators. The new backup generators would generate a limited amount of GHG emissions and would be used only as backup power sources and would not conflict with Valley Water's ability to contribute toward meeting the goals of SB 32.

Assembly Bill 1279
AB 1279 established the State policy to achieve net-zero GHG emissions as soon as possible and no later than 2045. Valley Water is advancing strategies to decarbonize its operation (discussed below under Valley Water CCAP), which would support the goals of AB 1279. The program would not conflict with Valley Water's ability to meet its decarbonization goals and progress toward achieving net-zero GHG emissions. The program would not conflict with Valley Water's ability to contribute toward meeting the goals of AB 1279.

CARB 2022 Scoping Plan
The CARB 2022 Scoping Plan endorses a net-zero threshold of significance but allows for the fact that this threshold may not be feasible or appropriate for every project. As described above under SB 32 and AB 1279, the program would not interfere with net-zero targets. The 2022 Scoping Plan also contains strategies for transportation sustainability, a clean electricity grid, sustainable manufacturing and buildings, and conservation of natural lands. The 2022 Scoping Plan is implemented at the State level. The program currently uses and would continue to use worker vehicles that meet current standards and would not conflict with 2022 Scoping Plan strategies for transportation sustainability. Valley Water is advancing strategies to decarbonize its operation (discussed below under Valley Water CCAP), which would support decarbonization goals set forth in the 2022 Scoping Plan. In addition, the program would not develop natural lands. For any pipeline replacement work within natural lands, the program work would remain within the established right-of-way, and therefore would not conflict with the strategy to conserve natural lands. The program would not conflict with the 2022 Scoping Plan or statewide programs designed to address GHG emissions reductions goals.

BAAQMD 2022 CEQA Guidelines
BAAQMD recommends that projects should incorporate best management practices for reducing GHG emissions (Table 6-1 in the 2022 BAAQMD CEQA Guidelines) (BAAQMD 2022). The PMP would achieve additional GHG reductions with implementation applicable BAAQMD BMPs as Project AMMs. AMM GHG-1 would require the use of zero-emission and hybrid-powered equipment to the greatest extent possible. This would include Valley Water owned and contractor vehicles. AMM GHG-2 would limit the use of portable diesel engines, typically generators, and provide electrical hookups where feasible. AMM GHG-3 would encourage and provide carpools options for construction employees.

The BAAQMD 2022 CEQA Guidelines include a bright-line threshold for stationary source GHG emissions and recommended BMPs for reducing construction-related GHG emissions. As

discussed under Impact GHG-1, program's GHG emissions from backup generators would not exceed the bright-line threshold, and thus would not conflict with the BAAQMD guidance. Furthermore, Valley Water's ongoing practices are consistent with many of the BAAQMD's recommended BMPs for reducing construction GHG emissions. For example, the Valley Water CCAP includes initiatives to expand the use of low-emission vehicles, use electric equipment when available, update diesel engines to comply with Tier 4 requirements, encourage alternative transportation, improve and expand off-road diesel engine idling policy, and improve energy efficiency at Valley Water facilities. Thus, Valley Water's continued GHG emission reduction efforts and implementation of BAAQMD BMPs as Program specific AMMs would ensure that the PMP would not conflict with the BAAQMD 2022 CEQA Guidelines.

Valley Water CCAP
Valley Water's CCAP sets seven goals to guide its response to climate change. Many of Valley Water's CCAP goals, strategies, and actions are aimed at reducing its GHG emissions. The program would maintain Valley Water's conveyance systems in good order, to maintain efficiency, reduce leaks and water losses, and ensure longevity of existing facilities, all of which would contribute to reducing overall GHG emissions associated with the water conveyance system. Valley Water's organization-wide GHG emissions reduction efforts would also reduce future GHG emissions from updated PMP implementation. These efforts would include adding more electric vehicles to Valley Water's fleet, transitioning to electric construction equipment, and reducing VMT. Program activities would be conducted in accordance with Valley Water's internal policies and procedures, including the CCAP. Therefore, the program would not conflict with the Valley Water CCAP.

The program would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact GHG-2.

3.10 Energy

This section provides an overview of the energy resources in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts on energy resources from program implementation.

3.10.1 Environmental Setting

Electricity and Natural Gas

Electricity in California is supplied through a complex grid of transmission lines and power plants. Approximately 71 percent of electricity consumed in 2022 was produced within the state, while the remaining 29 percent was imported. Approximately 54 percent of the total in-state electricity generation was generated through nuclear, hydroelectric, solar, wind, and other renewable and non-carbon dioxide (CO_2) emitting sources, compared to 52 percent in 2021 (CEC 2023b).

Total system electric generation is the sum of all utility-scale in-state generation plus net electricity imports. In 2022, total generation for California was 287,220 gigawatt-hours (GWh), up 3.4 percent, or 9,456 GWh, from 2021 (CEC 2023). Between 2009 and 2022, the highest total generation occurred in 2012 (301,965 GWh) and the lowest occurred in 2020 (272,576 GWh) (CEC 2023i). Generally, electricity demand has been flat or slightly declining. This is because energy efficiency programs have resulted in end-use energy savings, and customers have installed behind-the-meter solar photovoltaic systems that directly have displaced utility-supplied generation (CEC 2023a). In 2019, behind-the-meter solar generation was estimated to be 16,306 GWh, a 20 percent increase from 2018 (the most recent years with available information) (CEC 2020; 2023a). The strong growth in solar photovoltaic systems has had a measurable impact on the utility-served load, and consequently has affected the total system electric generation summary (CEC 2023a).

Pacific Gas and Electric Company (PG&E) has historically been the largest provider of natural gas and electricity for residential, commercial, and industrial customers throughout California, including the program area. PG&E's sources of electricity include hydroelectric, nuclear, renewable, natural gas, and coal facilities. In 2021, 48 percent of PG&E's energy was generated from renewable sources (e.g., solar, geothermal, biomass); 39 percent was generated from nuclear plants; and 4 percent was generated from large hydroelectric operations (PG&E 2022).

However, over the last 15 years, municipally owned public utilities have increasingly begun providing electricity service options for both their residential and business customers. Silicon Valley Clean Energy (SVCE), which is a public, not-for-profit agency, provides residents and businesses with electricity service in various portions of the program area, including the cities of Campbell, Gilroy, Cupertino, Los Altos, Milpitas, Morgan Hill, Mountain View, Saratoga, and Sunnyvale, as well as unincorporated portions of Santa Clara County. SVCE serves approximately 270,000 residential and business customers in its service area. Up to 100 percent

of SVCE's energy is obtained from renewable energy sources, including solar, wind, and hydroelectric (SVCE 2023). Other municipalities, including the City of Santa Clara (City of Santa Clara 2023b) and City of San Jose (City of San Jose 2023a), also offer Community Choice Energy (CCE) programs within their jurisdictions. The City of Santa Clara's Silicon Valley Power sources approximately 60 percent of its energy for residential customers from large hydroelectric facilities, with the remaining 40 percent from renewable sources such as solar and wind (City of Santa Clara 2023a). San Jose Clean Energy sources 60 percent of its energy portfolio from renewable energy sources and up to 95 percent from carbon-free sources (City of San Jose 2023b).

Valley Water purchases electricity from Power and Water Resources Pooling Authority (PWRPA), via the PG&E network (Valley Water 2015). The PWRPA is a Joint Powers Authority serving 15 water purveyors, including 9 irrigation districts, to collectively manage individual power assets and loads. In an effort to meet Valley Water objectives to achieve carbon neutrality, reduce Valley Water's overall greenhouse gas emissions, and reduce the amount of electricity purchased from PWRPA, solar photovoltaic (PV) systems were installed at Penitencia Water Treatment Plant (WTP) and Santa Theresa WTP (Valley Water 2015). Together, the PV systems at the WTPs are estimated to produce approximately 450 kilowatts (kW) (Valley Water 2015).

In 2021, the total amount of electricity use in Santa Clara County, which encompasses the majority of the program area, was approximately 16,905 million kilowatt-hours, approximately 12,632 million kilowatt-hours of which was from nonresidential sources (CEC 2023g). The county consumed approximately 417 million therms[1] of gas in 2021, approximately 181 million therms of which were consumed by nonresidential users (CEC 2023h).

Petroleum

Of the total amount of petroleum used in California in 2022, 26 percent came from California, 15 percent came from Alaska, and 59 percent came from non-U.S. sources. Petroleum is refined to produce gasoline, diesel fuel, and a variety of other liquid petroleum products (CEC 2023c).

Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline consumed by light-duty cars, pickup trucks, and sport utility vehicles (CEC 2023e). Diesel fuel is the second largest transportation fuel used in California, representing 17 percent of total fuel sales (CEC 2023f). Nearly all heavy-duty trucks; delivery vehicles; buses; trains; marine ships, boats, and barges; and farms, construction, and heavy-duty military vehicles and equipment have diesel engines. According to the California Department of Tax and Fee Administration, 13.6 billion gallons of gasoline and 3.1 billion gallons of diesel, including off-road diesel, were sold in California in 2022 (California Department of Tax and Fee Administration 2023a; 2023b).

[1] A therm is a unit of heat energy equal to 100,000 British thermal units, or approximately 29 kilowatt-hours.

In Santa Clara County, 573 million gallons of gasoline and 44 million gallons of diesel are estimated to have been sold in 2022 (CEC 2023d).

3.10.2 Regulatory Setting

Federal Regulations, Policies, and Standards

National Energy Conservation Policy Act
The National Energy Conservation Policy Act serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it has been regularly updated and amended by subsequent laws and regulations. This act is the foundation of most federal energy requirements.

National Energy Policy Act and Executive Orders 13423 and 13514
Enacted in 2005, the National Energy Policy Act sets equipment energy efficiency standards, seeks to reduce reliance on non-renewable energy resources, and provides incentives to reduce current demand on these resources. For example, under this act, consumers and businesses can attain federal tax credits by purchasing fuel-efficient appliances and products (including hybrid vehicles), constructing energy-efficient buildings, and improving the energy efficiency of commercial buildings. Furthermore, tax credits are available for installation of qualified fuel cells, stationary microturbine power plants, and solar-powered equipment.

Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), signed in 2007, strengthens the key energy management goals for the federal government and sets more challenging goals than the National Energy Policy Act. The energy reduction and environmental performance requirements of Executive Order 13423 were expanded on by Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance), signed in 2009.

Energy and Independence Security Act and Corporate Average Fuel Economy Standards
The Energy and Independence Security Act of 2007 (42 U.S. Code Section 17001) sets federal energy management requirements in several areas, including energy reduction goals for federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy-savings performance contracts, metering, energy-efficient product procurement, reduction in petroleum use (e.g., setting automobile efficiency standards), and increase in alternative fuel use. This act also amends portions of the National Energy Policy Conservation Act and includes provisions to increase the supply of renewable alternative fuel sources by setting a mandatory Renewable Fuel Standard. The standard requires the total amount of transportation fuel sold in the U.S. to contain a minimum of 36 billion gallons of renewable fuels annually by 2022. In addition, the law sets the Corporate Average Fuel Economy standard at 49 miles per gallon for passenger cars and light trucks by 2026 (NHTSA 2022).

State Regulations, Policies, and Standards

California Energy Action Plan II

California's Energy Action Plan II is the State's principal energy planning and policy document (CEC and CPUC 2005). The plan describes a coordinated implementation plan for State energy policies and refines and strengthens California's original Energy Action Plan I, published in 2003. California Energy Action Plan II identifies specific action areas so that California's energy is adequate, affordable, technologically advanced, and environmentally sound. The plan adopts a loading order of preferred energy resources to meet the state's needs and reduce reliance on natural gas and other fossil fuels, also important for achieving greenhouse gas (GHG) emissions reductions from the electricity sector.

California Energy Action Plan II considers energy efficiency and demand response as the first ways to meet the energy needs of California's growing population. The plan considers renewable energy and distributed generation as the best ways to achieve energy efficiency on the supply side. To the extent that energy efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, the California Energy Commission (CEC) supports clean and efficient fossil fuel-fired generation to meet California's energy needs. The 2008 Energy Action Plan Update provides a status update to Energy Action Plan II and continues the goals of Energy Action Plan I (CEC and CPUC 2008).

Senate Bill 1389 and the Integrated Energy Policy Report

Senate Bill (SB) 1389 was signed in 2002 and requires the CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices." These assessments and forecasts are used to develop recommendations for energy policies that conserve state resources, protect the environment, provide reliable energy, enhance the state's economy, and protect public health and safety. The CEC is required to issue a report every 2 years, and the most recent report is the 2022 Integrated Energy Policy Report, which provides the results of the CEC's assessments of numerous energy issues facing California, including energy reliability, fossil gas transition, the energy demand forecast, and the role of alternative fuels in the future (CEC 2023j).

California Renewables Portfolio Standard, Senate Bills 1078, 100, and 350

California's Renewables Portfolio Standard (RPS) program was established in 2002 by SB 1078, with the initial requirement that 20 percent of electricity retail sales must be served by renewable resources by 2017. SB 350 was enacted in 2015 and further strengthened the RPS program requirements, requiring that California reduce the use of petroleum in cars by 50 percent, generate half its electricity from renewable resources, and increase energy efficiency by 50 percent at new and existing buildings, all by 2030. In 2018, SB 100 further accelerated the RPS program, by requiring electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Climate Change Scoping Plan and Climate Change Scoping Plan Updates
The first Climate Change Scoping Plan was approved in 2008 and has been updated periodically ever since. These plans have focused on specific GHG emission reduction targets for California's industrial, energy, and transportation sectors—first, to meet 1990 levels by 2020, and then to meet the more aggressive target of 40 percent below 1990 levels by 2030. In December 2022, CARB adopted the 2022 Scoping Plan Update. The 2022 Scoping Plan Update extends and expands on these earlier plans, with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045 (CARB 2022).

Assembly Bill 117 and Community Choice Energy Programs
In 2002, Assembly Bill 117 was passed by the State, allowing local governments to purchase electricity on behalf of their residents and businesses to form CCE programs, providing consumers with more control over their energy mix and rates.

In-Use Off-Road Diesel-Fueled Fleets Regulation
The California Air Resources Board (CARB) has regulated in-use off-road diesel vehicles since 2008 through the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) (CARB 2023). The Off-Road Regulation was subsequently amended twice in 2009, and again in 2010. More recent amendments were approved in 2023 and are scheduled to become effective on October 1, 2023. The Off-Road Regulation requires fleets to reduce their emissions by retiring older vehicles and replacing the retired vehicles with newer vehicles, repowering older engines, or installing verified diesel emission control strategies in older engines; and by restricting the addition of older vehicles to fleets. The regulation also establishes idling restrictions, limitations on buying and selling older off-road diesel vehicles, reporting requirements, and retrofit and replacement requirements.

Advanced Clean Trucks Regulation
On June 25, 2020, CARB approved the Advanced Clean Trucks Regulation (CARB 2021), which requires truck manufacturers (any manufacturer that certifies vehicles over 8,500 pounds gross vehicle weight rating) with sales in California to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, all new trucks sold in California must be zero-emission.

Local Regulations, Policies, and Standards

Valley Water Climate Change Action Plan
Valley Water's Climate Change Action Plan (CCAP) builds on its existing climate change efforts by identifying the ways in which Valley Water and Santa Clara County are vulnerable to climate change and providing goals, strategies, and possible actions (Santa Clara Valley Water District (Valley Water) 2021). Applicable goals include reducing direct GHG emissions (e.g., by increasing fleet fuel efficiency), expanding renewable energy, improving energy efficiency, and reducing indirect GHG emissions. Valley Water has been successful in achieving carbon neutrality since 2014. Each subsequent year, Valley Water's quantity of offset or sequestered emissions have been greater than the quantity of reported emissions (Valley Water 2021). CCAP goals, strategies, and actions that are ongoing and relevant to the program are as follows:

Goal 1: Reduce Direct Greenhous Gas Emissions

Strategy 1.1: Reduce GHG emissions associated with the Valley Water fleet.

Action 1.1.1: Continue adding Electric Vehicles or other fuel-efficient vehicles to fleet, as stated by existing Board policy I-EL-5.11.a. xi.

Action 1.1.2: Install additional Electric Vehicle chargers at Almaden Campus and at other offices.

Action 1.1.5: Support the replacement or addition of high fuel efficiency and low emission vehicles when such choice is cost-effective and meets performance requirements.

Strategy 1.2: Reduce GHG emissions from trips between Valley Water offices and work sites.

Action 1.2.2: Ensure that maintenance routes are optimized to minimize GHG emissions.

Action 1.2.6: Improve awareness of existing off-road diesel engine idling policy and consider expanding idling policy to other vehicles.

Action 1.2.7: Promote fuel-saving policies and protocols such as, when safe, limiting hard braking while driving Valley Water vehicles, etc.

Strategy 1.3: Reduce GHG emissions associated with Valley Water-owned equipment.

Action 1.3.1: Replace diesel forklifts with electric forklifts.

Action 1.3.2: Update diesel engines to comply with the Tier 4 diesel emissions government mandate.

Action 1.3.3: Continue to replace less efficient equipment with more fuel-efficient Class 4 equipment (ex. generators, boats, other equipment, etc.) or devices that are powered by renewable energy (e.g., solar powered gages and monitoring devices).

Strategy 1.4: Minimize GHG emissions associated with planning, design, construction, operation, and maintenance of capital projects.

Action 1.1.1 Incorporate energy, water, and fuel efficiency into capital project planning, design, and long-term maintenance. ***Strategy 2.2:*** Improve energy efficiency at agency facilities.

Action 2.2.1: Update or expand the Energy Optimization Plan and other energy efficiency efforts. Regularly track the implementation of this plan and Valley Water's progress towards energy efficiency.

Action 2.2.4: Conduct regular energy assessments and encourage use of energy efficient technologies (including at the treatment plants, the Advanced Water Purification Center, and water pumping equipment).

Valley Water Board of Directors Policies

Valley Water also maintains governance policies of the Board of Directors, known as Ends Policies. Policy E-5 includes the following goal and objectives related to energy efficiency and renewable energy:

Goal 5.1. Minimize greenhouse gas emissions from Valley Water's operations.

Objective 5.1.1. Expand the use of clean technology in vehicles, equipment, and buildings, and develop carbon-efficient construction and service delivery practices.

Objective 5.1.2. Optimize energy use and expand renewable energy portfolio.

Objective 5.1.3. Incentivize low carbon practices, projects, and efforts by employees, contractors, and partners.

Santa Clara County

Santa Clara County General Plan

The Santa Clara County General Plan was adopted in 1994. The Resource Conservation Element includes strategies and policies related to energy resources. These include reducing transportation energy demand via land use planning and transit service; promoting energy-efficient buildings; and increasing public awareness to promote energy conservation. Those that are relevant to the program include the following (Santa Clara County 1994):

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.

General Plans of Incorporated Cities within Santa Clara County

Various energy resources are regulated by incorporated cities or towns in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to energy use:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)

- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The policies for each municipality are too numerous to identify herein. However, the general plans commonly have goals and policies that are focused on energy conservation, energy-efficient building practices, and encouraging use of renewable energy.

San Benito County

San Benito County General Plan

The 2035 San Benito County General Plan was adopted in 2016 and includes several strategies, goals, and policies that address energy efficiency and renewable energy generation in the county. The overarching goal in the General Plan is as follows (San Benito County 2015):

***Goal NCR-6*:** To increase energy independence and reduce greenhouse gas emissions through the use of renewable energy sources and improved energy conservation and efficiency.

Merced County

Merced County General Plan

The 2030 Merced County General Plan includes various goals and policies to promote energy efficiency and conservation (primarily for design standards related to new development) and encourage energy generation from renewable sources. No specific goals or policies are applicable to the PMP.

3.10.3 Impact Assessment Methodology

The impact presented in this section was evaluated qualitatively based on the program's anticipated use of energy resources and assessed against applicable state and local plans related to renewable energy or energy efficiency.

Significance Criteria

The impacts of the program on energy resources would be considered significant if they would exceed the following standards of significance:

- **Impact ENG-1:** Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during program construction or operation.
- **Impact ENG-2:** Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's Best Management Practices Handbook does not contain any energy-related best management practices applicable to the PMP.

Program-Specific Avoidance and Minimization Measures
As described in Section 2.7.3 of the Project Description, Valley Water would implement certain avoidance and minimization measures as part of the PMP to avoid or reduce impacts from program implementation. However, no energy-related AMMs are proposed.

3.10.4 Impact Analysis

Impact ENG-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during program construction or operation (less than significant)

Inspection and rehabilitation work at individual program work sites would result in minor, short-term energy consumption. All program actions would be anticipated to use energy resources in some form, whether gasoline, diesel fuel, other fuels, or electricity. Energy use during program activities typically would involve use of motor vehicles, both for transportation of workers and equipment as well as for construction equipment, such as cranes, loaders, and dozers. Additional energy use would occur as power for tools and equipment used on site, including gas generators, air compressors, air handlers and filters, and other typical direct construction energy uses.

Although the precise amount of energy consumption for the program is impossible to determine at this time, use of fuels would be consistent with typical construction and maintenance practices. Specifically, construction vehicles and equipment would comply with federal standards for vehicle fuel efficiency because all vehicles and machinery sold in the U.S. must meet those standards. Furthermore, off-road and on-road fleets are subject to efficiency standards established by State regulations that require a transition to cleaner vehicles over time. Because of the high cost of fuel and increasingly stringent motor vehicle fuel economy and emissions standards, construction and maintenance activities would not result in wasteful, inefficient, or unnecessary use of energy. Valley Water and its contractors would purchase fuel from local suppliers and would conserve the use of their supplies to minimize the cost of program implementation. Energy consumption associated with conducting program activities under the updated PMP would be equivalent to those generated by the existing PMP. Therefore, the impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact ENG-1.

Impact ENG-2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency (less than significant)

Valley Water's CCAP and Ends Policies focus on reducing energy and emissions from Valley Water as an organization. In accordance with the CCAP and Ends Policies, Valley Water

implements actions such as increasing fleet efficiency, increasing use of renewable energy, reducing vehicle travel, and encouraging use of efficient equipment. The CCAP identifies specific ongoing actions, such as adding electric and fuel-efficient vehicles (Action 1.1.1); installing additional electric vehicle chargers (Action 1.1.2); optimizing maintenance routes to reduce associated fuel use (Action 1.2.2); replacing equipment with electric-powered equipment and/or cleaner equipment (Actions 1.3.1, 1.3.2, and 1.3.3); obtaining carbon-free, renewable, and green energy (Actions 2.1.1 and 2.1.3); and completing energy assessments and tracking energy efficiency, including for equipment such as water pumping equipment (Actions 2.2.1 and 2.2.4). These actions would extend to the vehicles and equipment used for the program, energy used at Valley Water facilities, and construction and maintenance practices by Valley Water or contractors. The CCAP complements and supports California's targets for renewable energy use and GHG emissions reductions. The program would not involve land use changes that would indirectly result in an increase in vehicle trips or vehicle miles travelled, such as from relocation of an existing road or construction of new housing. As discussed under Impact EN-1, the program would not involve wasteful or inefficient energy consumption that would conflict with or obstruct existing plans. Therefore, program implementation would not conflict with the Valley Water CCAP or State plans for renewable energy or energy efficiency. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact ENG-2.

3.11 Noise

This section provides an overview of the noise and vibration conditions in the program area; applicable regulations, policies, and standards; and a discussion of the program's potential noise and vibration impacts.

3.11.1 Definitions

This subsection introduces key concepts and terms that are used in the evaluation of noise and vibration.

Noise

Noise is defined as unwanted sound. Airborne sound, which is a rapid fluctuation of air pressure above and below atmospheric pressure, becomes unwanted when it interferes with regular activities (e.g., sleep, speech, recreation, or tasks demanding concentration or coordination) or when it has harmful effects on human or environmental health. An individual's sound experience differs based on ambient noise levels, proximity to the sound, intensity and duration of the sound, and time of day the sound occurs.

Sound

Decibels and A-Weighted Sound Levels

Various noise descriptors are used to quantify the sound experience, depending on different time scales and perception. Sound levels usually are measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing. Most of the sounds that we hear in the environment do not consist of a single frequency, but a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency combine to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all frequencies of a sound in accordance with a filter that reflects the fact that human hearing is less sensitive at low and extreme high frequencies than in the frequency mid-range. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (dBA). Typical A-weighted levels measured in the environment and in industry are shown in Table 3.11-1 for different types of noise.

Not all changes in dBA level are readily perceptible by humans. A change of 1 dBA generally cannot be perceived, and a 3 dBA change is considered a just-perceivable difference. A change in noise level of at least 5 dBA is required before any noticeable change in community response can be expected. A 10 dBA change is heard subjectively as about a doubling in loudness and is almost certain to cause an adverse change in community response.

Table 3.11-1 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Caltrans 2013

Equivalent Sound Level

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources, creating a relatively steady background noise in which no particular source is identifiable. A single number descriptor called the Leq is widely used. The Leq is the average A-weighted noise level during a stated period of time.

Day/Night Noise Level and Community Noise Equivalent Level

In determining the daily level of environmental noise, accounting for the difference in response of people to daytime and nighttime noises is important. Exterior background noises generally are lower during the nighttime than during the daytime. Most household noise also decreases at night, and exterior noise becomes very noticeable despite reduced noise level. Most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor for day/night average sound level, L_{dn}, was developed. The L_{dn} divides the 24-hour day into the daytime between 7 a.m. and 10 p.m. and the nighttime between 10 p.m. and 7 a.m. The nighttime noise level is weighted 10 dB higher than the daytime

noise level. The Community Noise Equivalent Level (CNEL) descriptor is similar to L_{dn} but also adds a 5 dB penalty to noise occurring in the evenings between 7 p.m. and 10 p.m.

Noise from Multiple Sources

Because the measurement of sound pressure levels in decibels is based on a logarithmic scale, decibels noise from multiple sources cannot be added or subtracted in the usual arithmetical way. Adding a new noise source to an existing noise source, with both producing noise at the same level, will not double the noise level. For instance, if two identical noise sources each produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA (Caltrans 2013).

Noise Attenuation

Most noise sources can be classified as either point sources, such as stationary equipment, or line sources, such as a roadway. Sound generated by a point source nominally diminishes (attenuates) at a rate of approximately 6 dBA for each doubling of distance away from the source. For example, a 60 dBA noise level measured at 50 feet from a point source would be approximately 54 dBA at 100 feet from the source and 48 dBA at 200 feet from the source. Noise from a line source (e.g., roadways or corona noise from a transmission line) nominally attenuates at approximately 3 dBA per doubling of distance (USDOT 1995).

One row of buildings between a noise source and receptor provides a 4.5-dB reduction as a result of shielding, with each subsequent row resulting in an additional 1.5-dB reduction for up to 10 dB total (FTA 2018). The exterior walls of residences and buildings typically reduce outdoor noise levels by 12 to 15 dBA if windows are open and between 20 to 25 dBA if windows are closed, depending on the age of the structure. An acoustically well-insulated structure can provide approximately 35 dBA of noise attenuation when windows and doors are kept closed (Wyle Laboratories 1994).

Vegetation, topography, and certain structures can reduce noise levels that reach a receiver by serving as a barrier that deflects or absorbs sound. The effects of vegetation on noise levels varies widely based on the type, height, and density of the vegetation in relation to the location of the noise receptor. When the trees are taller than the noise receptor, dense trees can appreciably reduce noise levels (Fang and Ling 2003). The effect topography has on noise levels varies substantially and depends highly on the complexity of the terrain, location of the source of noise, and location of the receptors.

Topography, such as a hill, can serve as a noise barrier for receptors on the opposite side of the hill from the noise source. Topography must be at least high enough to obscure a line of sight between a noise source and receptor to serve as a noise barrier. The area behind the hill where noise would be dampened is considered the shadow region (Salomons 2001). Conversely, sound can reverberate or reflect off topography (e.g., in a canyon), increasing noise on the side of the hill where the noise was generated (Truax 1999).

Groundborne Vibration and Noise

Groundborne vibration may occur when heavy equipment or vehicles create vibrations in the ground, which then can propagate through the ground to buildings, creating a low-frequency sound. Groundborne vibrations can be a source of annoyance to humans because of a "rumbling" effect, and such vibrations also may cause damage to buildings. Groundborne vibration is discussed in terms of these impacts on humans and structures. The annoyance potential of groundborne noise typically is characterized by the A-weighted sound level. Because of its low frequency, groundborne noise sounds louder than airborne noise at the same noise level; therefore, the impact thresholds for groundborne noise typically are lower than those for airborne noise.

The potential for damage to structures is expressed in peak particle velocity (PPV). PPV often is used in construction vibration monitoring because it is related to the stresses that are experienced by buildings and is not used to evaluate human response. PPV usually is expressed in inches/second (in/sec) in the United States.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below a level that would result in damage to a structure. Except for long-term occupational exposure, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. People may tolerate infrequent, short-duration vibration levels, but human annoyance to vibration becomes more pronounced if the vibration is continuous or occurs frequently. Human response to vibration often is described as the root-mean-square (RMS) velocity level and is denoted in the vibration decibel scale, or VdB. The typical background level in residential areas is about 50 VdB, and most people cannot detect levels below about 65 VdB, and generally do not consider levels below 70 VdB (approximately 0.1 PPV), to be an annoyance (FTA 2018). However, the duration of a vibration event has an effect on human response, as does its frequency. Generally, as the duration of a vibration event increases, the potential for adverse human response increases, particularly if the vibration event disturbs sleep. In addition, while people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration.

Vibration in buildings caused by construction activities may be perceived as motion of building surfaces or rattling of windows, items on shelves, and pictures hanging on walls. Vibration of building components can also take the form of an audible low-frequency rumbling noise, which is referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range of vibration frequencies (i.e., 60 to 200 Hertz); when the structure and the construction activity are connected by foundations or utilities, such as sewer and water pipes; or when the airborne noise path is blocked, such as during tunneling activities.

3.11.2 Environmental Setting

The environmental setting for this section presents an overview of the existing noise conditions, sources of noise, and ambient noise levels in the program area, which includes Santa Clara County as well as limited sections of eastern Merced County and San Benito County, in which a

2.5-mile segment of the Pacheco Conduit and 2-mile segment of the Santa Clara Conduit pipeline are located, respectively.

Noise Levels and Sources

Santa Clara County

Background noise levels in the program area vary greatly, from the very low noise levels in the semi-rural western and eastern foothills and southern valleys to the high noise levels of the urbanized central Santa Clara Valley floor. Ambient noise levels in urban areas, such as the cities of San Jose, Cupertino, Sunnyvale, and Milpitas, typically are high from vehicle traffic, construction and development activities, and airport noise (discussed below). Several program pipelines are near freeways, such as U.S. 101, Interstate 280, Interstate 880, and Interstate 680, where higher ambient noise levels are evident due to their high volumes of traffic.

San Benito and Merced Counties

Program areas in San Benito County and Merced County are in sparsely populated, unincorporated portions of their respective counties. In the northeast corner of San Benito County where a portion of the Santa Clara Conduit traverses, the ambient noise environment is defined primarily by traffic on State Route 152 (San Benito County 2015a). Sources of noise identified in Merced County include traffic on major roadways and highways, railroad operations, and airports (Merced County 2012), which are discussed below. Major noise sources, such as Interstate 5, State Route 99, and airports, are distant enough from the program area that they do not influence the noise environment in the pipeline vicinity. In the portion of Merced County that overlies the program area, road noise from State Route 152 is the primary source of ambient noise (Merced County 2012).

Airports and Airstrips

Program pipelines are within 2 miles of the following airports:

- San Jose Mineta International Airport (SJC; approximately 0.5 mile from Valley Water's Central Pipeline)
- Reid-Hillview Airport (approximately 0.8 mile west of Valley Water's Eastern Evergreen Pipeline and Parallel East Pipeline)
- San Martin Airport (approximately 1.5 miles west of the Santa Clara Conduit near San Martin)
- Frazier Lake Airpark (private airstrip) (approximately 1 mile south of the Santa Clara Conduit)

Program pipelines and facilities are located within the land use plan areas for SJC and the Reid-Hillview Airport. The highest ambient noise levels in the program area are encountered in the vicinity of SJC, a large regional airport with high daily volumes of airplane traffic. The noise environment of the north-central portion of the Santa Clara Valley is heavily influenced by takeoffs and landings from SJC and, in accordance with State law, the airport monitors noise levels throughout the valley. Airport land use planning documents establish an elliptical contour around SJC, within which noise levels from aircraft exceed 65 dBA CNEL (Windus

2016). Valley Water's program pipelines in proximity to SJC include the Central Pipeline and East Pipeline.

Two other smaller (general aviation) airports—the Reid-Hillview Airport and San Martin Airport—are in the program area. Similar to SJC, the Reid Hillview Airport in San Jose is within a few miles of the Central Pipeline and East Pipeline. San Martin Airport flight patterns intersect with a limited segment of the Santa Clara Conduit (Santa Clara County 2023b). A private airstrip is south of Gilroy in San Benito County, south of the Santa Clara Conduit. Additional information regarding these airports is presented in Section 3.4, Hazards and Hazardous Materials, and their locations are shown in Figure 3.4-3.

Sensitive Noise Receptors

Some land uses generally are regarded as being more sensitive to noise than others because of the types of population groups or activities involved. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise and potential sleep disruptions. Additional land uses, such as schools, hospitals, childcare facilities, nursing homes, and other similar facilities also are considered sensitive to exterior noise. Furthermore, parks and trails in quiet areas may be considered sensitive receptors. (Santa Clara County 1994b)

The program area encompasses both rural and suburban areas with noise-sensitive land uses, including residences, schools, hospitals, childcare facilities, nursing homes, and recreational facilities present throughout. Many noise-sensitive receptors in the program area are in urban environments in the Santa Clara Valley, where ambient noise generally is higher and dominated by traffic and aircraft noise, as described above. Although other less-densely populated portions of the program area, including the agricultural region in the south and open spaces and foothills in the east and west, generally have fewer noise-sensitive receptors, scattered residences, trails, and other sensitive receptors still are present in these areas. Because the program area encompasses such a vast area with such a wide variety of land uses, the analysis evaluates the program's potential noise impacts on non-specific noise-sensitive receptors in proximity to the covered pipelines.

The majority of Valley Water pipeline alignments are in relatively wide Valley Water or shared utility ROWs (approximately 200 to 300 feet wide) or within public roadways. However, some pipelines are located within or in close proximity to various residential property lines or other sensitive receptors particularly in program areas with dense residential land uses. In some instances, program pipelines even cross property lines of sensitive receptors such as school campuses.

Vibration Levels and Sources

Existing sources of groundborne vibration in the program area include light and heavy rail transit, ongoing construction activities, heavy trucks, and buses. Valley Transportation Authority light rail lines travel throughout the urbanized portion of the program area. Bay Area Rapid Transit rail lines are in the eastern portion of the program area, in Milpitas and San Jose.

The Caltrain commuter rail line extends from Gilroy north to San Francisco, passing through Gilroy, Morgan Hill, San Jose, Santa Clara, Sunnyvale, and Mountain View. Amtrak and Union Pacific rail lines also operate in the program area. Rapid transit or light rail systems typically generate vibration levels of 70 VdB (or approximately 0.1 PPV) or more near their tracks, while buses and trucks rarely create vibration that exceeds 70 VdB unless roadways are poorly maintained, and frequent potholes are encountered in the road. Heavy locomotives on diesel commuter rail systems create vibration levels that are approximately 5 to 10 dB higher than rail transit vehicles (FTA 2018).

3.11.3 Regulatory Setting

Federal Regulations, Policies, and Standards

The Federal Noise Control Act of 1972 divides noise control authority between federal, State, and local governments. State and local governments are responsible for controlling the use of noise sources and determining the levels of noise to be permitted in their environments. As such, no federal regulations or policies governing noise are applicable to the program.[1] However, federal standards and guidance established for noise and vibration are frequently used to establish thresholds and/or evaluate noise and vibration impacts at State and local levels. Applicable standards are described below.

Federal Transit Authority Transit Noise and Vibration Impact Assessment Manual

The Federal Transportation Authority's (FTA's) Transit Noise and Vibration Impact Assessment Manual (FTA 2018) provides guidance on quantitative assessment methodologies to estimate construction noise and vibration levels. For quantitative noise modeling, the FTA guidance evaluates the noise levels from the two loudest pieces of equipment expected to operate concurrently at a given construction site. For quantitative vibration modeling, construction vibration is assessed by evaluating each piece of construction equipment individually. The FTA Manual also provides typical noise levels from representative construction equipment at 50 feet from the noise source and typical vibration levels from representative construction equipment at 25 feet from the source. Noise and vibration levels for construction equipment relevant to the PMP are provided in Table 3.11-2 and Table 3.11-3, respectively.

The FTA Manual also establishes specific land use categories that consider the noise metrics in terms of land use type and resulting noise-sensitive times of day. The FTA Manual defines

[1] Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under Title 40 of the Code of Federal Regulations, Part 205, Subpart B. The federal truck passby noise standard is 80 dBA at 50 feet from the vehicle pathway centerline, under specified test procedures. These requirements are implemented through regulatory controls on truck manufacturers.

groundborne vibration impact criteria by vibration decibels (VdB) by land use category, as presented in Table 3.11-4.

Table 3.11-2 FTA Construction Equipment Noise Emission Levels

Equipment	Typical Noise Levels at 50 Feet (dBA)
Air compressor	80
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete saw	90
Crane (mobile)	83
Dozer	85
Generator	82
Grader	85
Jack hammer	88
Loader	80
Paver	85
Pump	77
Roller	85
Saw	76
Scraper	85
Truck	84

Source: FTA 2018

Table 3.11-3 FTA Vibration Source Levels for Construction Equipment

Equipment	PPV (in/sec) at a 25 ft
Jack hammers	0.035
Loaded trucks	0.076
Large dozer	0.089
Small dozer	0.003

Source: FTA 2018

Table 3.11-4 FTA Groundborne Vibration Impact Criteria

Land Use Category	Groundborne Vibration Levels (VdB re 1 micro-inch/sec)		
	Frequent Events[a]	**Occasional Events[b]**	**Infrequent Events[c]**
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[d]	65 VdB	65 VdB
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	80 VdB

Notes:

[a] Frequent events are defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

[b] Occasional Events are defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.

[c] Infrequent Events are defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

[d] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. For equipment that is more sensitive, a detailed vibration analysis must be performed.

Source: FTA 2018

State Regulations, Policies, and Standards

California Department of Transportation Construction Vibration Guidance Manual

The California Department of Transportation's (Caltrans') Construction Vibration Guidance Manual provides guidance and procedures to assess the potential for adverse effects related to human perception and structural damage resulting from various sources of vibration, including construction equipment (Caltrans 2020). The Caltrans Manual provides guidelines for vibration damage to various types of building structures, as presented in Table 3.11-5.

Table 3.11-5 Caltrans Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources[a]	**Continuous/Frequent Intermittent Sources[b]**
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources[a]	**Continuous/Frequent Intermittent Sources[b]**
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes:

[a] Transient sources create a single isolated vibration event, such as blasting or drop balls.

[b] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2020

Noise Compatibility Guidelines

The Noise Element Guidelines (Appendix D) of the Governor's Office of Planning and Research's General Plan 2017 Guidelines provide a basis for local programs to control and abate environmental noise, and to protect residents from excessive exposure (OPR 2017). These guidelines include a noise level/land use compatibility chart that categorizes various outdoor L_{dn} ranges into up to four compatibility categories (i.e., normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use.

These normally and conditionally acceptable L_{dn} ranges are intended to indicate that local conditions (existing noise levels and community attitudes toward dominant noise sources) should be considered in evaluating land use compatibility at specific locations. These guidelines are used by many agencies, environmental planners, and acoustical specialists as a starting point to evaluate the potential for noise impacts on and by a project. The guidelines are also used to evaluate methods for achieving noise compatibility with respect to nearby existing uses. Table 3.11-6 summarizes these guidelines for the normally and conditionally acceptable L_{dn} exposures.

Table 3.11-6 California Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA): Normally Acceptable	Community Noise Exposure (L_{dn} or CNEL, dBA): Conditionally Acceptable
Residential – low density	50–60	60–70
Residential – high density	50–65	65–70
Transient lodging – motels, hotels	50–65	65–70
Schools, libraries, churches, hospitals, nursing homes	50–60	60–65
Auditoriums, concert halls, amphitheaters	NA	50–70
Sports arenas, outdoor spectator sports	NA	50–75

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA): Normally Acceptable	Community Noise Exposure (L_{dn} or CNEL, dBA): Conditionally Acceptable
Playgrounds, neighborhood parks	50–67.5	NA
Golf courses, riding stables, water recreation, cemeteries	50–70	NA
Office buildings, business commercial and professional	50–67.5	67.5–77.5
Industrial, manufacturing, utilities, agricultural	50–70	70–80

Source: OPR 2017

Pacheco State Park General Plan

The portion of the program area in Merced County is entirely within Pacheco State Park. The General Plan for Pacheco State Park identifies the long-term vision and goals for the park and provides guidelines for protecting park resources (California Department of Parks and Recreation 2006). The General Plan does not include goals or policies applicable to noise.

Local Regulations, Policies, and Standards

Pursuant to California Government Code Section 53091, Valley Water, as a local agency and special district, is not subject to building and zoning ordinances (such as noise ordinances) for projects involving facilities for the production, generation, storage, or transmission of water. However, as a standard practice, Valley Water coordinates with local jurisdictions and neighboring communities to consider local policies for guidance and implements best management practices (BMPs) and project- or program-specific avoidance and minimization measures (AMMs) to act as a good neighbor in its service area.

Santa Clara County

Santa Clara County General Plan

The Safety and Noise Chapter of the Santa Clara County General Plan includes policies providing guidelines for noise levels. The General Plan outlines recommended maximum interior noise levels for intermittent noise, as shown in Table 3.11-7 (Santa Clara County 1994a). The General Plan strategy and policy that may apply to the program are as follows:

Noise Strategy #1: Prevent or Minimize Noise Conflicts

Policy C-HS 25: Noise impacts from public and private projects should be mitigated.

Table 3.11-7 Recommended Maximum Interior Noise Levels for Intermittent Noise: Santa Clara County

Category	Use	dBA
Residential	Residences	45
Commercial	Hotels/Motels	45
	Executive Offices, Conference Rooms	55
	Staff Offices	60
	Restaurants, Markets, Retail Stores	60
	Sales, Secretarial	65
	Sports Arenas, Bowling Alleys	75
Industrial	Offices (same as above)	55–60
	Laboratories	60
	Machine Shops, Assembly, and Others	75
	Mineral Extraction	75
Public or Semi-Public Facility	Concert Halls and Legitimate Theaters	30
	Auditoriums, Movie Theaters, and Churches	45
	Hospitals, Nursing Homes, and Firehouses (sleeping quarters)	40
	School Classrooms	50
	Libraries	50
	Other Public Buildings	55

Source: Santa Clara County 1994

Noise Ordinance

The Santa Clara County Noise Ordinance (Chapter VIII: Control of Noise and Vibration) contains exterior noise limits for sensitive receiving land uses (Section B11-152) (Santa Clara County 2023a). Although the Noise Ordinance sets these maximum limits, Section B11-156, Special Provisions, creates an exemption for construction/demolition work. The following construction and demolition noise standards applicable to program activities are as follows:

Section B11-156. Special Provisions

(d) Exemption from Exterior Noise Standards. The provisions of Section B11-152 shall not apply to activities covered by the following sections:

(3) B11-154 (6) construction/demolition

Section B11-154. Prohibited Acts

(b) Specific prohibitions. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

(6) Construction/Demolition

a. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekdays and Saturday hours of 7 p.m. and 7 a.m., or at any time on Sundays or holidays, such that the sound there from creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance. This section will not apply to the use of domestic power tools as specified in Subsection 11.

b. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule:

    i. Mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment [refer to Table 3.11-8].

    ii. Stationary equipment. Maximum noise levels for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment (refer to Table 3.11-9).

(7) Vibration. Operating or permitting the operation of any device that creates a vibrating or quivering effect that:

a. Endangers or injures the safety or health of human beings or animals;
b. Annoys or disturbs a person of normal sensitivities; or
c. Endangers or injures personal or real properties.

Table 3.11-8 Maximum Noise Levels of Mobile Equipment: Santa Clara County

Allowable Time Frames	Single- and Two-Family Dwelling Residential Area	Multifamily Dwelling Residential Area	Commercial Area
Daily, except on Sundays and legal holidays, 7 a.m. to 7 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7 p.m. to 7 a.m. and all day on Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Table 3.11-9 Maximum Noise Levels of Stationary Equipment

Allowable Time Frames	Single- and Two-Family Dwelling Residential Area	Multifamily Dwelling Residential Area	Commercial Area
Daily, except on Sundays and legal holidays, 7 a.m. to 7 p.m.	60 dBA	65 dBA	70 dBA
Daily, 7 p.m. to 7 a.m. and all day on Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Local Ordinances and General Plans of Incorporated Cities within Santa Clara County
Program tasks would occur in a number of jurisdictions with local plans and ordinances, including the cities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Morgan Hill, Mountain View, San Jose, Santa Clara, Saratoga, and Sunnyvale, and the Town of Los Gatos.

Each of these local jurisdictions have established noise-related policies and guidelines (e.g., construction standards, zoning restrictions, limited construction hours, and required suppression techniques/practices), to minimize adverse noise effects on their communities. Goals for noise levels are defined to be compatible with the various land use types (including noise-sensitive receptors) within each jurisdiction. However, all jurisdictions recognize that higher-than-standard noise levels may 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 infrastructure programs such as the PMP, jurisdictions typically provide noise ordinance and regulatory exemptions for specific, short-term, and temporary construction activities. Table 3.11-10 summarizes the noise standards and policies established by the local jurisdictions in the program area.

Table 3.11-10 City Noise Ordinance Specifications and General Plan Policies

Jurisdiction	Relevant Noise Ordinance Criteria/Restrictions	Relevant General Plan Policies
City of Campbell	**Hours of construction—Time and noise limitations.** Construction activities are limited to the hours between 8 a.m. and 5 p.m. daily, Monday through Friday. Saturday hours of construction are limited to between 9 a.m. and 4 p.m. No construction activities are permitted on Sundays or public holidays, as defined by Title 5 U.S. Code § 6103(a). No loud environmentally disruptive noise over 50 dB, such as air compressors without mufflers, continuously running motors or generators, loud playing musical instruments or radios will be allowed during the authorized hours of construction, Monday through Saturday, where such noise may be a nuisance to adjacent residential neighbors. (Campbell Municipal Code, Section 18.04.052) **Noise – Exemptions.** Sound or noise emanating from the following sources and activities are exempt from the provisions of this chapter: Noise from construction of public works projects and maintenance activities, or city-sponsored events, may be exempted from the provisions of the noise ordinance by the city manager or his designee should the public benefit of alternative work hours and or noise levels require such modification. (Campbell Municipal Code, Section 21.16.070)	**Noise Goal No-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-1.17.** Require construction activities to comply with standard best practices (see Action N-1h and Chapter 18.04 of the Municipal Code). Construction activities outside of the permitted construction hours identified in the Campbell Municipal Code (Chapter 18.04 - Building Code) may be approved on a case by case basis by the Building Official. (City of Campbell 2023)
City of Cupertino	Construction activities are limited to daytime hours, which are 7 a.m. to 8 p.m. Monday through Friday, and 9 a.m. and 6 p.m. Saturdays and Sundays (Cupertino Municipal Code, Section 10.48.010).	**Goal Health & Safety (HS)-8.** Minimize noise impacts on the community and maintain a compatible noise environment for existing and future land use **Policy HS-8.3: Construction and Maintenance Activities.** Regulate construction and maintenance activities. Establish and enforce

Jurisdiction	Relevant Noise Ordinance Criteria/Restrictions	Relevant General Plan Policies
	High-quality noise muffler and abatement devices must be installed and in good condition on all construction equipment. Construction must meet either of two criteria: 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. (Cupertino Municipal Code, Chapter 10.48.053)	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 (City of Cupertino 2014a).
City of Gilroy	Construction hours are limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 7 p.m. on Saturdays. Construction is not allowed on Sundays or city holidays basis (Gilroy Municipal Code, Section 16.38.a). The chief building official may grant permission to allow construction to occur between 7 p.m. and 7 a.m. on a case-by-case basis (Gilroy Municipal Code, Section 16.38.b).	**Goal Potential Hazards (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 6.11 Construction and Maintenance Noise Limits.** Limit the hours of construction and maintenance activities to the less sensitive hours of the day (7:00am to 7:00pm Monday through Friday and 9:00am 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 (City of Gilroy 2020).
City of Los Altos	Construction activities within single-family zoning districts are prohibited before 7 a.m. and after 5:30 p.m. on weekdays, before 9 a.m. or after 3 p.m. on Saturdays, and any time on Sundays or City-observed holidays. Construction activities within all other zoning districts are prohibited before 7 a.m. and after 7 p.m. on weekdays, before 9 a.m. or after 6 p.m. on Saturdays, and any time on Sundays or City-observed holidays. Where technically and economically feasible, construction activities must be conducted in a manner that does not exceed the following maximum noise levels at affected properties, which apply to both short-term (less than 10 days) operation of mobile equipment and long-term (more than 10 days) operation of stationary equipment:	**Noise 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 7.9:** Minimize stationary noise sources and noise emanating from construction activities (City of Los Altos 2002).

Jurisdiction	Relevant Noise Ordinance Criteria/Restrictions	Relevant General Plan Policies
	• Daytime (7 a.m.-7 p.m.; excluding Sundays and holidays): – Low-Density Residential: 75 dBA – High-Density Residential/Public: 80 dBA – Office/Commercial: 85 dBA • Nighttime (7 p.m.-7 a.m.), Sundays, and holidays: – Low-Density Residential: 50 dBA – High-Density Residential/Public: 55 dBA – Office/Commercial: 60 dBA (Los Altos Municipal Code, Section 6.16.070)	
City of Milpitas	Construction activities are limited to 7 a.m. to 7 p.m. on weekdays and weekends and are not permitted on City-observed holidays. (Milpitas Municipal Code, Section 213.3.07) Construction and maintenance of utility facilities are exempt. (Milpitas Municipal Code, Section 213.3.08)	**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-8.** Require construction activities to comply with standard best practices to reduce noise exposure to adjacent sensitive receptors (see Action N 1d). **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: • 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.

Jurisdiction	Relevant Noise Ordinance Criteria/Restrictions	Relevant General Plan Policies
		• 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 (City of Milpitas 2021).

Jurisdiction	Relevant Noise Ordinance Criteria/Restrictions	Relevant General Plan Policies
City of Morgan Hill	No land use or activity may produce noise levels in excess of the following maximum noise level standards specified by receiving land use (maximum noise level at lot line of receiving use): • Industrial and Wholesale: 70 dBA • Commercial: 65 dBA • Residential or Public/Quasi Public: 60 dBA These noise standards do not apply to noise generated by temporary construction, demolition, or vehicles associated with construction. (Morgan Hill Municipal Code Section 18.76.090) Construction activities are prohibited other than between the hours of 7 a.m. and 8 p.m., Monday through Friday and between the hours of 9 a.m. to 6 p.m. on Saturday. Construction activities are prohibited on Sundays or federal holidays. Construction may take place from 8 p.m. to 7 a.m. if granted by the chief building official. (Morgan Hill Municipal Code, Section 8.28.040)	**Goal Safety, Services, and Infrastructure (SSI)-8.** Prevention of noise from interfering with human activities or causing health problems. **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 (City of Morgan Hill 2016).
City of Mountain View	Construction activities are limited to 7 a.m. to 6 p.m. on weekdays. No work is permitted on Saturdays without prior approval. No construction activity is allowed on Sundays or recognized holidays (Mountain View Municipal Code, Section 8.70) No stationary equipment that produces more than 55 dBA (50 dBA at night) may be operated unless a conditional use permit is approved by the zoning administrator. (Mountain View Municipal Code, Section 21.26)	**Goal NOI-1:** Noise levels that support a high quality of life in Mountain View. **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 (City of Mountain View 2012).
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 and is prohibited at any time on weekends. However, these time restrictions are limited only to construction activities requiring a permit from the City. (San Jose Municipal Code, Section 20.100.450) Maximum noise levels at property lines are established for various zoning districts, including open space and agricultural use (55-70 dB), residential use (55 dB), commercial or public/quasi-public use	**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-1.6. Regulate the effects of operational noise from existing and new industrial and commercial development on adjacent uses through noise standards in the City's Municipal Code. Policy EC-1.7. Require construction operations within San José to use best available noise suppression devices and techniques and limit

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	(55-60 dB), industrial use (55-70 dB). (San Jose Municipal Code, Sections 20.20.300, 20.30.700, 20.40.600 and 20.50.300)	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 (City of San Jose 2011).
City of Santa Clara	For stationary sources, daytime (7 a.m.-10 p.m.) and nighttime (10 p.m.-7 a.m.) exterior noise limits are established by receiving zone/land use category. • Low-density residential: 55 dBA (daytime); 50 dBA (evening) • High-density residential/public: 55 dBA (daytime); 50 dBA (evening) • Commercial/office: 65 dBA (daytime); 60 dBA (nighttime) For light and heavy industrial zoning categories, exterior noise limits are 70 and 75 dBA, respectively, anytime during day or night (Santa Clara Municipal Code, Section 9.10.040). 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. (Santa Clara Municipal Code, Section 9.10.230).	**Noise Goal 5.10.6-G1.** Noise Sources restricted to minimize impacts in the community. **Noise Goal 5.10.6-G1.** Sensitive uses protected from noise intrusion. **Noise 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 (City of Santa Clara 2010).

Jurisdiction	Relevant Noise Ordinance Criteria/Restrictions	Relevant General Plan Policies
	Construction and maintenance of utility facilities is exempt from these aforementioned restrictions (Santa Clara Municipal Code, Section 9.10.240).	
City of Saratoga	Daytime (7 a.m.-7 p.m.), evening (7-10 p.m.), and nighttime (10 p.m.-7 a.m.) exterior noise limits are established by receiving land uses (Lmax at property boundary). • Residential: 65 dBA (daytime), 55 dBA (evening), 50 dBA (nighttime) • Open Space/Parks: 70 dBA (daytime), 55 dBA (evening), 50 dBA (nighttime) • Commercial/Office: 75 dBA (daytime), 70 dBA (evening), 60 dBA (nighttime) • Public/Quasi-Public: 70 dBA (daytime), 60 dBA (evening), 50 dBA (nighttime) Construction is limited to the hours of 7 a.m. and 6 p.m. on weekdays and between the hours of 9 a.m. and 5 p.m. on Saturday. Construction activities are prohibited on Sundays and weekday holidays. Construction, alteration, repair, and grading activities shall not exceed 100 dBA measured at any point 25 feet or more from the source of noise. (Saratoga Municipal Code, Section 7-30.060)	**Noise Goal #2.** Promote land-use compatibility by addressing noise exposure from existing noise sources. **Noise Policy 2.5.** Parks and recreational areas should be protected from excessive noise to permit the enjoyment of sports and other leisure time activities. Parks and other recreational areas which are impacted by outside noise sources should be provided with noise protection devices, including barriers and landscaping. Park design should locate passive recreation areas away from noise sources. **Noise Policy 2.7.** Noise generated by equipment, animals and amplified sound shall meet adopted standards as amended from time to time (City of Saratoga 2014).
City of Sunnyvale	Construction activities are permitted only between 7 a.m. and 6 p.m. on weekdays and between 8 a.m. and 5 p.m. on Saturdays. Construction is not permitted on Sundays or national holidays, unless approved by the chief building official. 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. (Sunnyvale Municipal Code, Section 16.08.030) Maximum daytime and nighttime noise limits are identified for operational noise experienced at adjacent property lines as follows: **Residential Noise Limits.**	**Goal Safety & Noise (SN)-8.** Maintain or achieve a compatible noise environment for all land uses in the community. **Policy SN-8.7.** Ensure new stationary noise sources affecting existing development comply with adopted Sunnyvale Municipal Code Title 19 (Zoning). **Policy SN-8.13.** Consider techniques which block the path of noise and insulate people from noise. **Goal SN-9.** Maintain or achieve acceptable limits for the levels of noise generated by land use operations and single events.

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	• Low-density residential: 50 dBA (nighttime) or 60 dBA (daytime) • Open space/multi-family residential: 55 dBA (nighttime) or 65 dBA (daytime) • Mixed use residential/residential along transportation corridors: 60 dBA (nighttime) or 70 dBA (daytime) **Nonresidential Noise Limits.** • Nonresidential: 60 dBA (nighttime) or 70 dBA (daytime) • Industrial, manufacturing, or similar: 75 dBA (daytime) Construction activities are exempt from these maximum operational noise limits (Sunnyvale Municipal Code, Section 19.42.030).	**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. **Policy SN-9.2**. When new equipment is installed on a property, including new stationary noise sources (e.g., heating, ventilation, and air conditioning systems, generators, heating boilers) that could affect existing sensitive land uses, construction of enclosures or other screening materials should be installed around the stationary noise source such that equipment is in compliance with the city's operational noise code (City of Sunnyvale 2011).
Town of Los Gatos	The following exterior noise limits are established for residential and commercial zones, as well as public property: • Residential zones: Noise level of more than 6dB above specified noise zone, as shown in the Noise Zone Map (Los Gatos Municipal Code, Section 16.20.015) • Commercial/industrial zones: Noise level of more than 8 dB above specified noise zone, as shown in the Noise Zone Map (Los Gatos Municipal Code, Section 16.20.025) • Public property: Noise level of more than 15 dB above specified noise zone, as shown in the Noise Zone Map (Los Gatos Municipal Code, Section 16.20.030) Construction activities are limited to 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 4 p.m. on Saturdays. Construction is prohibited outside those hours and on Sundays and legal holidays. Construction must meet either of two criteria: no single device may produce a noise in	**Goal ENV-21.** Ensure that construction and maintenance equipment noise does not adversely affect land uses (Town of Los Gatos 2022).

Jurisdiction	Relevant Noise Ordinance Criteria/Restrictions	Relevant General Plan Policies
	excess of 85 dBA at a distance of 25 feet, *or* the noise levels at nearby properties must not exceed 85 dBA. Construction outside of standard permissible hours may be approved by the chief building official (Los Gatos Municipal Code, Section 16.20.035)	

Sources: City of Campbell 2006; City of Cupertino 2020; City of Gilroy 2004; City of Los Altos 2023; City of Milpitas 2022; City of Morgan Hill 2021; City of Mountain View 2022; City of San Jose 2002; City of Santa Clara 2023; City of Saratoga 2021; City of Sunnyvale 2023; Town of Los Gatos 2023

San Benito County

San Benito County General Plan

The Health and Safety Element of the San Benito County General Plan includes policies and guidelines for noise levels. The General Plan outlines land use compatibility guidelines for community noise environments. The program area in San Benito County is comprised of agricultural lands; the General Plan considers noise levels of up to 80 dBA CNEL as normally acceptable in agricultural areas, and levels from 80 to 85 dBA CNEL to be normally unacceptable (San Benito County 2015b). General Plan strategies and policies that may apply to the program are as follows:

Goal HS-8: To protect the health, safety, and welfare of county residents through the elimination of annoying or harmful noise levels.

Policy HS-8.3: Construction Noise: The County shall control the operation of construction equipment at specific sound intensities and frequencies during daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction shall be allowed on Sundays or federal holidays.

Policy HS-8.12: Construction Noise Control Plans: Require all construction projects to be constructed within 500 feet of sensitive receptors to develop and implement construction noise control plans that consider the following available controls in order to reduce construction noise levels as low as practical:

- Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;
- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- Notify all abutting land uses of the construction schedule in writing; and
- Designate a "disturbance coordinator" (e.g., contractor foreman or authorized representative) who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Noise Ordinance

The San Benito County Noise Control Regulations (San Benito County Code, Chapter 19.39) defines maximum allowable sound levels for a variety of land uses. Section 19.39.051 of the code exempts temporary construction, demolition, or maintenance of structures from the provisions of the chapter, provided that work is limited to the hours of 7 a.m. to 7 p.m. and does not occur on Sundays and federal holidays (San Benito County 2011). The code also exempts noise sources associated with a lawful commercial or industrial activity caused by mechanical devices or equipment, including air conditioning or refrigeration systems. The allowable construction hours differ slightly between the General Plan and noise ordinance.

Merced County

Merced County General Plan

The Health and Safety Element of the Merced County General Plan includes goals and policies for noise levels. The General Plan outlines noise level standards developed to quantify noise impacts in the county, including noise-sensitive areas affected by traffic, railroad, or airport noise sources and interior and exterior noise-level standards for noise-sensitive areas affected by non-transportation noise sources (Merced County Board of Supervisors 2013). General Plan goals and policies that may apply to the program are as follows:

Goal HS-7: Protect residents, employees, and visitors from the harmful and annoying effects of exposure to excessive noise.

Policy HS-7.5: Noise Generating Activities. Limit noise generating activities, such as construction, to hours of normal business operation.

Merced County Code

Chapter 10.60, Noise Control, of the County Code sets the following limitations on noise levels at the property line of affected parcels.

A. No person shall cause, suffer, allow, or permit the operation of any sound source on private property in such a manner as to create a sound level that results in any of the following, when measured at or within the real property line of the receiving property:
    1. Exceeds the background sound level by at least ten (10) dBA during daytime hours (seven a.m. to ten p.m.) and by at least five dBA during nighttime hours (ten p.m. to seven a.m.). The background sound level for purposes of this section shall be determined as set forth in Section 10.60.060; or
    2. Exceeds sixty-five (65) dBA Ldn on residential real property or seventy (70) dBA Ldn on nonresidential real property; or
    3. Exceeds seventy-five (75) dBA Lmax on residential real property or eighty (80) dBA Lmax on nonresidential real property.

The code exempts several noise sources, including construction activity provided that all construction in or adjacent to urban areas are limited to the daytime hours between 7 a.m. and 6 p.m., and all construction equipment is properly muffled and maintained.

3.11.4 Impact Assessment Methodology

Potential impacts related to noise and vibration are analyzed based on the potential for the program to result in substantial changes in the noise or vibratory environment during program activities. This analysis evaluates the noise and vibration impacts associated with construction and operation of the program. Two types of noise and vibration impacts were considered: short-term, temporary impacts resulting from program construction activities, and impacts from long-term operational changes in the noise environment.

Construction

Construction-related noise and vibratory impacts from program activities were analyzed using typical sound and vibration levels for the various construction equipment and vehicles expected to be associated with program activities. Because this PEIR evaluates impacts at the programmatic level and all program circumstances are not foreseeable, a quantitative analysis of all noise and vibration-generating construction scenarios is infeasible. Instead, a quantitative analysis is conservatively presented for the program activities that would generate the most noise and vibration and a qualitative analysis is presented for all other program activities.

Noise

During construction, noise from construction activities and equipment could expose nearby existing off-site sensitive receptors to temporary increases in noise levels that exceed ambient levels. Construction noise levels would vary from day to day, depending on several factors, including the quantity and condition of the equipment being used, the types and duration of activity being performed, the distance between the noise source and the receptor, and the presence or absence of barriers, if any, between the noise source and the receptor. In addition to on-site construction activities, trucks hauling materials to and from the program work site may result in increased levels of off-site noise. Construction activities also could result in varying degrees of groundborne noise and groundborne vibration, depending on the equipment, activity, and soil conditions.

Implementation of the program activities would include the use of heavy equipment intermittently at various program work sites throughout the program area. Construction activities could expose noise-sensitive receptors to temporary increases in noise levels exceeding ambient levels. This assessment includes a programmatic level of evaluation of noise generated by the construction equipment that is anticipated to be used during construction. Noise from construction activities would vary, depending on the type of equipment in use, how many pieces of equipment are operating at any one time, the proximity of equipment to a noise receptor location (i.e., mobile equipment could be moved around a construction site), and the duration of equipment use.

Program construction also would result in temporary increases in truck traffic noise along haul routes as trucks haul excavated materials away, arrive at and leave the site during concrete pours, and deliver materials to the site. Because construction noise is inherently variable, qualitative factors (e.g., duration and frequency of the noise, proximity to sensitive receptors) also were taken into consideration in the construction noise analysis, as applicable. Therefore,

quantitative noise levels (i.e., the standards established in the local general plan or noise ordinance, or applicable standards of other agencies) were considered, in combination with qualitative factors to determine the significance of program-generated noise.

The analysis evaluated temporary noise emissions from construction equipment and related noise levels at the nearest noise-sensitive receptors per the FTA's guidelines for assessing noise impact and relative to the existing noise environment. Specifically, the assessment determined the noise level resulting from the simultaneous operation of the two loudest pieces of equipment (including impact equipment) relative to the allowed noise thresholds as identified in local regulations and ordinances.

Vibration

Program-related construction vibration was evaluated against the limits identified in the FTA's guidelines for assessing vibration disturbance to people (human annoyance) and the limits identified in the Caltrans guidelines for assessing vibration damage to buildings. FTA recommends that the disturbance and damage potential for each piece of equipment be assessed individually. For each piece of equipment, this analysis calculated the buffer distances at which vibration levels would be reduced below the disturbance threshold for sensitive receptors (based on the Indoor FTA Groundborne Vibration Impact Criteria) and below the damage thresholds for structures (based on the Caltrans Vibration Guidelines for Potential Damage to Structures). Because this PEIR evaluates impacts programmatically and all program circumstances are not foreseeable, this analysis conservatively used the Caltrans threshold for extremely fragile historic buildings (0.08 in/sec PPV) for continuous/frequent intermittent sources as the significance threshold. This analysis then evaluated impacts on vibration sensitive receptors within the buffer distances. Similarly, this analysis conservatively assumed that program activities could occur in close proximity to sensitive receptors, and that construction activities could result in generation of groundborne noise levels above the 80-VdB threshold for human annoyance.

Operation

As described in Chapter 2, Project Description, installation of up to 20 new backup generators would be a covered activity under the PMP. No other permanent equipment that would generate operational noise would be installed under the program. Therefore, the operational noise analysis evaluated noise from these stationary sources relative to the allowed operational noise limit as identified in local regulations and ordinances.

Significance Criteria

The impacts of the program related to noise would be considered significant if they exceed the following standards of significance:

- **Impact NOI-1:** Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

- **Impact NOI-2:** Generate excessive groundborne vibration or groundborne noise levels.
- **Impact NOI-3:** For program activities in the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the program area to excessive noise levels.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of best management practices (BMPs) from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's Best Management Practices Handbook does not contain any noise-related BMPs applicable to the PMP.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific avoidance and minimization measures (AMMs) as part of the PMP to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to noise are provided in Table 3.11-11.

Table 3.11-11 Noise-Related AMMs

AMM No.	AMM Requirements
AMM NOI-1	**Construction Noise Reduction Measures.** Valley Water will require its staff and/or contractor to implement the following noise reduction measures: • All noise-sensitive receptors (e.g., residences, hospitals, schools, etc.) within 180 feet of the limits of the program work area will be identified prior to staging or use of any heavy construction equipment. • Stationary noise-generating equipment will be located as far from sensitive receptors as possible. Such equipment also will be oriented to minimize noise directed toward sensitive receptors. Where space allows, other non-noise generating equipment (e.g., water tanks, roll-off dumpsters) will be positioned between the noise source and sensitive receptors. • Equipment and staging areas will be located as far from sensitive receptors as possible. At the staging location, equipment and materials also will be kept as far from adjacent sensitive receptors as possible. • Construction vehicles and equipment will be maintained to manufacturer's specifications; operated by an experienced, trained operator who will use the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds). • 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. • Electrically powered equipment will be used instead of pneumatic or internal combustion-powered equipment, where feasible. • The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only.

AMM No.	AMM Requirements
	• The arrival and departure of trucks hauling material will be limited to the hours of construction. The use of jake brakes will be prohibited in residential areas.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to noise.

3.11.5 Impact Analysis

Impact NOI-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (significant and unavoidable)

As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Tasks that would require the use of noise-generating equipment and have the potential to result in a temporary increase in ambient noise in the vicinity of program work sites would include:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Excavation, construction, and other ground disturbance
- Repair of pipeline system infrastructure
- Non-ground-disturbing repair

These activities may occur in proximity to noise-sensitive receptors, such as residences, schools, hospitals, and parks. Because the program area encompasses a vast area with a wide variety of land uses, this analysis evaluates the program's potential noise impacts on non-specific noise-sensitive receptors in proximity to the covered pipelines. Sources of temporary noise associated with the program would include use of construction vehicles and equipment and pipeline draining/valve air releases. Sources of operational noise would be limited to the operation of new permanent backup generators.

As discussed under Local Regulations, Policies, and Standards, local noise standards and ordinances identify specific maximum noise limits and/or construction schedule restrictions. Therefore, the noise generated by program construction (including construction equipment and traffic) and the timing of noise-generating activities were evaluated to assess noise impacts under this significance criteria, as presented below. An evaluation of noise associated with operation of new permanent backup generators also is presented below to assess operational impacts associated with the program.

Construction Equipment Noise

Various program tasks would require the use of different types of construction equipment and vehicles, which would generate varying levels of noise. The types of equipment and vehicles would differ, depending on the nature of each inspection, maintenance, or rehabilitation effort undertaken and program worksite-specific conditions. Activities such as setup, staging, and access, or excavation, backfill, construction, and other ground disturbance would require heavy equipment, such as concrete saws, dump trucks, backhoes, dozers, loaders, and compactors, and typically would generate the most noise.

Table 3.11-12 summarizes typical noise levels generated by the construction equipment that would be used to implement program activities, as measured at varying distances from the source. Construction equipment noise levels decrease by approximately 6 dBA per doubling of distance from the source because of geometric divergence (i.e., the spreading of noise from a source) alone (provides a clear line of sight exists to the equipment). For example, the noise level of a backhoe creating 80 dBA at 50 feet would be 74 dBA at 100 feet and 68 dBA at 200 feet.

Table 3.11-12 Typical Construction Equipment Noise Levels

Equipment	Typical Noise Levels at 25 Feet (dBA)	Typical Noise Levels at 50 Feet (dBA)	Typical Noise Levels at 100 Feet (dBA)	Typical Noise Levels at 200 Feet (dBA)
Air compressor	86	80	74	68
Backhoe	86	80	74	68
Compactor	88	82	76	70
Concrete mixer	91	85	79	73
Concrete pump	88	82	76	70
Concrete saw	96	90	84	78
Crane (mobile)	89	83	77	71
Dozer	91	85	79	73
Generator	88	82	76	70
Grader	91	85	79	73
Jack hammer	94	88	82	76
Loader	86	80	74	68
Paver	91	85	79	73
Pump	83	77	71	65
Roller	91	85	79	73

Equipment	Typical Noise Levels at 25 Feet (dBA)	Typical Noise Levels at 50 Feet (dBA)	Typical Noise Levels at 100 Feet (dBA)	Typical Noise Levels at 200 Feet (dBA)
Saw	82	76	70	64
Scraper	91	85	79	73
Truck	90	84	78	72

Source: FTA 2018; Federal Highway Administration 2006

During some program activities, multiple pieces of equipment are expected to be operated simultaneously. Each doubling of a construction equipment noise source would increase overall noise levels by approximately 3 dBA. For example, one truck would produce 84 dBA at a distance of 50 feet, while two trucks would produce 87 dBA at 50 feet. In accordance with FTA guidance, the noise level from the two loudest pieces of equipment that are expected to operate concurrently at a given program work site was quantitatively evaluated. A variety of program activities would occur throughout the program area, and all site-specific circumstances are not foreseeable. Thus, this analysis conservatively assumed that program activities could occur in close proximity to sensitive receptors, and program activities may require the simultaneous use of the two loudest pieces of program equipment, which would be a concrete saw and jack hammer, producing 96 and 94 dBA at 25 feet. Expected noise levels for simultaneous operation of these pieces of equipment were calculated based on data used in the Federal Highway Administration's Roadway Construction Noise Model (RCNM) Version 1.1. The resultant noise levels at various distances from the source are summarized in Table 3.11-13.

Table 3.11-13 Noise Levels for Concrete Saw and Jackhammer

Scenario	Approximate Distance from Source (feet)	Approximate Noise Level at Receptor (dBA Leq)
Jackhammer + concrete saw (concurrent operation)	25	97
	100	85
	180	80
	320	75
	1,010	65

Source: Panorama 2024a

If simultaneous operation of a jackhammer and concrete saw is required within 25 feet of a sensitive receptor, the noise level experienced at that receptor would be 97 dBA. This noise level would exceed the noise ordinance criteria for the City of Cupertino and the Town of Los Gatos, which require noise levels to not exceed 80 dBA and 85 dBA, respectively. As described in Section 3.11.4, Impact Assessment Methodology, Valley Water would implement AMM NOI-1

as part of the PMP. AMM NOI-1 would require implementation of various noise reduction measures during construction, including siting and orienting stationary noise-generating equipment away from sensitive receptors, equipping construction vehicles and equipment with the best available noise control devices, and limiting idling of construction vehicles. Although implementation of AMM NOI-1 would reduce the noise impacts from construction vehicles and equipment, noise generated by construction still may exceed the thresholds that are identified in local noise ordinances. The impact would be **significant**.

Construction Traffic

Traffic noise is not greatly influenced by lower levels of traffic, such as those associated with program-related construction. For example, traffic levels would need to double for traffic noise on adjacent roads to increase by 3 dBA. As discussed in Chapter 2, Project Description, the vast majority of program tasks would require one to five crewmembers during construction. Larger program tasks, such as excavation for pipeline repair, may require a crew of up to approximately a dozen crew members. Because of the low number of construction workers required, construction traffic that would be generated by these activities would increase hourly traffic volumes by much less than a factor of 2; therefore, the increase in construction-related traffic noise would be less than 3 dBA. The impact from construction traffic noise would be **less than significant**.

Construction Schedule/Timing

In certain cases, program activities could require evening or nighttime work (occurring between 7 p.m. and 7 a.m.), beyond the timeframes allowed by local ordinances. For example, draining occasionally may require access to water draining locations, vaults, and blow-off facilities beyond normal work hours. In other cases, continuous work may be required to return facilities to service quickly. Rarely, nighttime work also could occur in roads to avoid daytime impacts on traffic. Although nighttime work is anticipated to be limited, it would have the potential to generate noise at sensitive receptors in excess of applicable nighttime noise standards or require work to be performed outside allowable hours. The impact would be **significant**.

Permanent Backup Generators

The program would include installation and operation of up to 20 new permanent diesel generators, dispersed throughout the program area to provide backup power to existing program facilities. Operation of these new generators would be the only new permanent noise source associated with the PMP. As with existing generators at program facilities, new diesel generators would not be operated continuously; they would be operated during emergencies and for periodic testing (e.g., monthly). All generators would be outdoor-rated and sound-attenuated to restrict noise. Similar to existing generators, Valley Water would install backup generators within noise-attenuating enclosures, having steel panels that would be equipped with acoustic barriers, sound-absorbing insulation on interior panels, and exhaust mufflers to ensure that generator noise would not exceed the allowable noise levels set forth by the local jurisdiction. Thus, the new generators would not conflict with applicable noise standards. The impact would be **less than significant**.

Significance Determination
Significant

Mitigation
To reduce the impacts related to construction equipment generating noise in excess of local standards and construction occurring outside allowable hours under Impact NOI-1, Valley Water would implement Mitigation Measure (MM) NOI-1 and MM NOI-2, as described below.

> **MM NOI-1: Construction Noise Notification.** If program activities require the use of noise-generating construction vehicles or equipment within 180 feet of any sensitive noise receptor (as determined by implementation of AMM NOI-1), Valley Water or its contractor will review applicable noise ordinance regulations for the relevant local jurisdiction(s). If the applicable noise ordinance identifies a maximum construction noise limit, Valley Water or its contractor will implement the following:
>
> - Post the construction schedule and the contact information for a public liaison responsible for responding to public inquiries and complaints at a publicly viewable location at the construction site before the start of construction.
> - Notify neighbors/occupants within 300 feet of the program work site regarding the estimated duration of the activity at least 30 days in advance of the construction activities.
>
> **MM NOI-2: Nighttime/Weekend Noise Control and Notification.** If program activities require the use of heavy construction equipment between the hours of 5 p.m. and 8 a.m. or on weekends, Valley Water or its contractor will review applicable nighttime and weekend noise restrictions for the relevant local jurisdiction(s). If work will occur outside allowable construction hours for any jurisdiction, Valley Water or its contractor will prepare and implement a nighttime/weekend noise control plan (to be implemented by the project engineer). At a minimum, the plan will include:
>
> - Identification of applicable nighttime and/or weekend noise restrictions for the local jurisdiction
> - An estimate of the noise levels that will be generated by the planned program activities, including groundborne vibration and noise
> - An evaluation of the anticipated noise levels at sensitive receptors where people sleep (including residences and hotels) and the times during which construction noise is expected to be audible at these locations
> - Identification of specific measures to reduce the noise levels at sensitive receptors. Such measures may include:
>   - Installing temporary noise barriers between regions of significant activity and noise-sensitive receptors. If this measure is used, the noise control plan will identify the necessary height, location, material, and minimum noise reduction of the noise barriers.
>   - Limiting use of noisy equipment. If this measure is used, the noise control plan will identify the necessary restrictions for specific pieces of

equipment, such as locations where equipment may be used, allowable duration of use, and pieces of equipment that may not be used concurrently.
- Other noise-reduction measures as identified by Valley Water or its contractor.

The noise control plan will be submitted to the Valley Water Environmental Health and Safety Unit for approval prior to initiating construction. (If a program activity also requires the development of a groundborne vibration monitoring plan, as discussed under Impact NOI-2 and MM NOI-3, the noise control plan may be combined with the vibration monitoring plan if both are required for the program activity.

Valley Water also will notify residents (through flyers, mailers, or door-to-door notification) within 300 feet of anticipated nighttime construction activities or weekend construction regarding the estimated duration of the activity at least 30 days in advance of the activity.

Significance after Mitigation

Implementation of MM NOI-1 would require advanced public notification regarding the construction schedule and the identification of a public liaison responsible for responding to public inquiries and complaints regarding construction. Although implementation of MM NOI-1 may address some public nuisance related to noise, it would not reduce noise levels, and local ordinance noise thresholds still may be exceeded. Furthermore, this PEIR evaluates impacts at the programmatic level, and the circumstances for all program tasks are not foreseeable. Therefore, noise levels still may exceed the local noise standards or otherwise be substantial. Implementation of this MM NOI-2 would require that before undertaking nighttime work, Valley Water or its contractor would prepare a nighttime noise control plan. MM NOI-2 would also require Valley Water or its contractor to obtain approval of the noise control plan (to be implemented by the project engineer) by the Environmental Health and Safety Unit prior to initiating construction. The plan would identify the applicable nighttime and weekend noise thresholds for the jurisdiction where work is scheduled to occur, evaluate the noise levels that would be generated by program activities and the anticipated noise levels at sensitive receptors, and identify measures to reduce the noise levels at sensitive receptors to the maximum extent feasible. However, applicable noise thresholds for nighttime and weekend work may still be exceeded. Although implementation of MM NOI-2 would reduce nighttime and weekend noise impact, carrying out construction during these prohibited time frames would not comply with local noise ordinances. No other mitigation measures for this impact would be feasible because work during prohibited hours may be required to ensure the reliability and integrity of critical infrastructure and/or may be required to avoid daytime traffic and circulation impacts (and related hazards) on major roadways. Impact NOI-1 would remain **significant and unavoidable**.

Impact NOI-2: Generate excessive groundborne vibration or groundborne noise levels (less than significant with mitigation incorporated)

Of the various common tasks that would be implemented to perform program activities, several would require heavy trucks and construction equipment that could generate groundborne vibration and/or noise. These tasks would include:

- Setup, staging, and access
- Excavation, construction, and other ground disturbance

Equipment used during these activities could include various heavy trucks (e.g., flatbed delivery trucks, water trucks, dump trucks), backhoes, loaders, dozers, cranes, excavators, jackhammers, vibratory rollers, and shoring equipment, including the use of pile drivers on rare occasion, all of which would generate varying levels of groundborne vibration.

Impacts from construction-related groundborne vibration would depend on the equipment used and the soil conditions surrounding the program work site. Of the covered program tasks, pipeline system infrastructure maintenance and repair tasks would require the most use of vibration-generating equipment, such as jackhammers, loaded trucks, and bulldozers. Although infrequent, the use of pile drivers also may be required to install shoring within excavated trenches.

The FTA Transit Noise and Vibration Impact Assessment Manual (FTA 2018) provides average source levels for typical construction equipment that may generate groundborne vibrations at 25 feet from the source, as summarized in Table 3.11-14.

Program pipelines traverse a wide variety of land uses, including residential neighborhoods and urban areas with people and structures that may be sensitive to groundborne vibration. The main concerns associated with construction-generated vibration include building/structure damage and human annoyance. The Caltrans Transportation and Construction Vibration Guidance Manual provides criteria for both building/structure damage potential, which are summarized in Table 3.11-15.

Table 3.11-14 Vibration Source Levels from Construction Equipment

Equipment	PPV at 25 feet (in/sec)	Vibration Velocity at 25 feet (VdB)
Pile driver (impact)[a]	0.644	104
Vibratory roller	0.21	94
Large bulldozer	0.089	87
Loaded truck	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Note:

[a] Reported ground vibration levels vary considerably due to many factors, including soil types, geology, method, pile type, pile size, and equipment size; the typical ranges for impact pile driver and vibratory pile driver are presented

Table 3.11-15 Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources[a]	Continuous/Frequent Intermittent Sources[b]
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes:

[b] a. Transient sources would create a single isolated vibration event, such as blasting or drop balls.

[c] b. Continuous/frequent intermittent sources would include impact pile drivers and vibratory compaction equipment.

Source: Caltrans 2020

For impacts related to human response, the FTA Manual establishes specific land use categories that consider the noise metrics in terms of land use type and resulting noise-sensitive times of day. The FTA Manual defines groundborne vibration impact criteria by vibration decibels (VdB) by land use category, as shown in Table 3.11-16.

Table 3.11-16 FTA Groundborne Vibration Impact Criteria

Land Use Category	Groundborne Vibration Levels (VdB re 1 micro-inch/sec)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[d]	65 VdB	65 VdB
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	80 VdB

Notes:

[a] a. Frequent events are defined as more than 70 vibration events of the same source per day.

[b] b. Occasional events are defined as between 30 and 70 vibration events of the same source per day.

[c] c. Infrequent events are defined as fewer than 30 vibration events of the same kind per day.

[d] d. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes.

Source: FTA 2018

Of the construction equipment used to implement the PMP, the equipment that would generate the highest levels of groundborne vibration would be pile drivers and vibratory rollers. Pile drivers would generate 0.644 in/sec PPV at 25 feet from the source, and vibratory rollers would generate 0.631 in/sec PPV at 12 feet from the source, which would exceed the Caltrans threshold for extremely fragile historic buildings (0.08 in/sec PPV). Use of vibration-generating construction equipment within close enough proximity to adjacent buildings or structures could result in exposure to excessive levels of groundborne vibration, causing cosmetic or structural damage to buildings or structures. Such damage would result in a significant impact.

The indoor groundborne vibration impact criteria for annoyance is 72 VdB for frequent events, 75 VdB for occasional events, and 80 VdB for infrequent events. Typical vibration dB levels for a large dozer are 87 VdB at a distance of 25 feet, and a loaded truck typically produces 86 VdB at a distance of 25 feet, which would exceed the threshold for human annoyance at this distance. Program construction equipment, such as impact pile drivers and vibratory rollers, would generate 112 VdB and 94 VdB, respectively, at a distance of 25 feet. A variety of program activities would occur throughout the program area, and all site-specific circumstances are not foreseeable. Thus, this analysis conservatively assumed that program activities could occur in close proximity to sensitive receptors, and that program construction activities could result in generation of groundborne noise levels above the 80-VdB threshold for human annoyance. If sensitive receptors are exposed to groundborne noise levels in exceedance of this threshold continuously over a long period, this would be considered to be excessive groundborne vibration., constituting a significant impact.

For the PMP, use of vibration-generating equipment would be intermittent and temporary because these sources would be mobile and would be moving along the alignment or throughout work area. The duration of time necessary for work would depend on the length of the pipeline segment needing to be excavated, but tasks generally would be completed within a few weeks. Furthermore, operation of vibration-generating equipment would not be continuous throughout the workday or over the duration of construction at any one program work site. Such equipment would be used only during short, specific phases during the construction period.

In addition, groundborne vibration decreases in intensity quickly with increased distance from the source. Groundborne vibration from a pile driver attenuates to below the 0.08 in/sec PPV Caltrans threshold at 101 feet from the source. Similarly, at 50 feet from the source, groundborne vibration from a vibratory roller would attenuate to below the 0.08 in/sec PPV threshold. For human response threshold, groundborne vibration from loaded trucks would attenuate to 80 VdB at a distance of 50 feet, while vibration from vibratory rollers would attenuate to 80 VdB at 125 feet from the source. Table 3.11-17 lists the vibration source amplitudes in PPV and VdB for construction equipment at various distances from the source.

As described in Section 3.11-26, Impact Assessment Methodology, Valley Water would implement AMM NOI-1 as part of the PMP. Implementation of AMM NOI-1 would reduce vehicle and equipment noise, including groundborne vibration noise, through practices such as locating staging areas and equipment as far as possible from receptors, orienting equipment to direct noise away from sensitive receptors, limiting idling, and using electrically powered equipment. Although implementation of AMM NOI-1 would reduce the groundborne noise and vibration impacts from construction vehicles and equipment, vibration generated by construction equipment and activities still may exceed the thresholds for human annoyance and structure damage. The impact would be **significant**.

Table 3.11-17 Vibration Source Levels for Construction Equipment at Various Distances

Equipment	PPV (in/sec) at a Given Distance						VdB at a Given Distance					
	25 feet	50 feet[b]	75 feet[b]	100 feet[b]	125 feet[b]	150 feet[b]	25 feet	50 feet[c]	75 feet[c]	100 feet[c]	125 feet[c]	150 feet[c]
Small bulldozer	0.003	0.001	0.001	0.000	0.000	0.000	58.0	52.0	48.5	46.0	44.0	42.4
Jack hammer	0.035	0.012	0.007	0.004	0.003	0.002	79.0	73.0	69.5	67.0	65.0	63.4
Loaded trucks	0.076	0.027	0.015	0.010	0.007	0.005	86.0	80.0	76.5	74.0	72.0	70.4
Large bulldozer	0.089	0.031	0.017	0.011	0.008	0.006	87.0	81.0	77.5	75.0	73.0	71.4
Vibratory roller	0.210	0.074	0.040	0.026	0.019	0.014	94.0	88.0	84.5	82.0	80.0	78.4
Pile driver (impact)[a]	0.644	0.228	0.124	0.081	0.058	0.044	112.0	106.0	102.5	100.0	98.0	96.4

Notes:

[a] Reported ground vibration levels vary considerably because of many factors, including soil types, geology, method, pile type, pile size, and equipment size. The typical ranges for impact pile driver and vibratory pile driver are presented.

[b] Vibration levels at these distances from the source were calculated using FTA Manual equation 7.2:

[c] PPVequip = PPVref x (25/D)1.5

[d] Vibration levels at these distances from the source were calculated using FTA Manual equation 7.3:

[e] Lv.distance = Lvref - 30log(D/25)

Source: FTA 2018 and Panorama 2024b

Significance Determination
Significant

Mitigation
To reduce impacts of groundborne vibration under Impact NOI-2, Valley Water would implement MM NOI-3 below.

MM NOI-3: Groundborne Vibration-Control Plan. If use of any of the following vibration-generating equipment is required within the following minimum distances from any buildings or structures, Valley Water or its contractors will implement vibration monitoring in compliance with the requirements below.

Minimum Distances from Vibration-Generating Equipment to Structures

Equipment	Minimum Distance to Structure
Jackhammer	15 feet
Loaded truck	25 feet
Large bulldozer	30 feet
Vibratory roller	50 feet
Pile driver (impact)	100 feet

Before beginning construction, a groundborne vibration control plan (to be prepared and implemented by the project engineer) will be submitted to the Valley Water Environmental Health and Safety Unit to obtain approval of the groundborne vibration control plan. The plan will detail the procedures for vibration monitoring, including

- The name of the firm providing the vibration monitoring services
- A description of the instrumentation and equipment to be used
- Methods for mounting the instrumentation to the ground
- The data collection analysis procedure
- The number of vibration monitors to be used at each structure/building
- The means and methods of providing warning when particle velocity will be equal to or exceed specified limits
- The name(s) of the responsible person/vibration-monitoring personnel
- A contingency plan for alternative construction methods when PPV equals to or exceeds specified limits

After the vibration monitoring plan is approved by the Valley Water Environmental Health and Safety Unit and project engineer assigned to the construction project, the vibration monitoring equipment will be furnished and installed. The first vibration monitoring before the start of construction will establish the baseline for all subsequent recordings. Equipment will be in place and functioning properly before use of the above vibration-generating equipment within the minimum distances to structures identified.

The equipment will be set up in a manner so that an immediate warning is given when the resultant PPV equal to or exceeding 0.08 in/sec is produced. The 0.08 in/sec PPV is the Caltrans threshold for extremely fragile historic buildings (see Table 3.11-5). The warning emitted by the vibration monitoring equipment will be transmitted instantaneously to the responsible person who has been designated by Valley Water or its contractor, by means of warning lights, audible sounds, or electronic transmission. The responsible person/vibration-monitoring personnel will have the authority to stop the work causing the vibration.

If the PPV reading on monitoring equipment equals to or exceeds 0.08 in/sec, work will cease immediately, and Valley Water or its contractor will implement the approved contingency plan to reduce and maintain the monitoring equipment reading below 0.08 in/sec before resuming work.

Significance after Mitigation

To reduce the potential for groundborne vibration to damage structures and buildings, Valley Water would implement MM NOI-3, which would require Valley Water or its contractor to monitor vibratory levels at buildings and structures at specified distances within which risk of damage potential would exceed the 0.08 in/sec PPV threshold. MM NOI-3 also would require that work cease in the event vibration levels at nearby buildings or structures would exceed 0.08 in/sec PPV, and that a contingency construction plan would be implemented that would maintain vibration levels to below the damage potential threshold. MM NOI-3 would also reduce the indoor vibration level that would be experienced by people occupying adjacent buildings, thereby reducing the potential for human annoyance below thresholds. The impact would be **less than significant with mitigation incorporated**.

Impact NOI-3: Expose people residing or working in the program area to excessive noise levels in the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport (less than significant)

Four airports operate within 2 miles of the program area, including SJC, Reid-Hillview Airport, San Martin Airport, and Frazier Lak Airpark. Program pipelines and facilities are within the land use plan areas for SJC and the Reid-Hillview Airport.

Program impacts would be considered significant if the program would increase noise levels in the vicinity of an airport so that people living or working in the program area would be exposed to excessive noise levels. Of the nearby airports, SJC generates the most noise. A segment of one program pipeline, Central Pipeline, is within SJC's airport influence area (AIA) (Windus 2016). Two program pipelines, the Eastern Evergreen pipeline and Parallel East pipeline, which share the same ROW along South White Road, are adjacent to the AIA of Reid-Hillview Airport (Windus 2020). If program-related construction activities are required along these pipelines within the AIAs for SJC and Reid-Hillview Airport, people residing or working in the vicinity could be exposed to excessive noise levels, if program-generated noise was combined with high levels of aircraft noise.

Airport land use planning documents establish an elliptical contour around SJC, within which noise levels from aircraft exceed 65 dBA CNEL (Windus 2016). CNEL noise contours modeled from aircraft noise for SJC indicated that approximately 0.4 mile of the Central Pipeline along Emory Street between Chestnut Street and Highway 87/Guadalupe Parkway is within an area of 65 to 70 dBA CNEL (Windus 2016). Most of this portion of Central Pipeline traverses undeveloped space north of Columbus Park, where people do not reside or work. The eastern and western terminuses of this segment of pipeline are in areas dominated by industrial land uses. As shown in Table 3.11-6, the State's Noise Compatibility Guidelines define normally acceptable CNEL for industrial land uses as 50 to 70 dBA CNEL. A noise level of 65 to 70 dBA is equivalent to the ambient noise experienced in commercial or urban areas. CNEL noise contours as modeled from aircraft noise for Reid-Hillview Airport indicated that the portion of the AIA within which the Eastern Evergreen pipeline and Parallel East pipeline are located would have a CNEL of 60 dBA or less (Windus 2020), within the normally acceptable range of CNEL for all land use categories as identified in the State's Noise Compatibility Guidelines. Because the CNEL for the program areas within these AIAs would be within the normally acceptable CNEL ranges, implementation of program activities in the vicinity of airports would not expose people residing or working in the program area to excessive noise levels. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact NOI-3.

3.12 Aesthetics

This section provides an overview of the scenic resources in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts on scenic resources from program implementation.

3.12.1 Environmental Setting

Regional Overview

The program area is primarily in Santa Clara County, with program pipelines traversing much of the county. Santa Clara County has a diversity of natural settings and landscapes. Santa Clara Valley runs the entire length of the county from north to south, flanked by the rolling hills of the Diablo Range to the east into Stanislaus and Merced counties, and the Santa Cruz Mountains to the west. Along the west side of the valley, the coastal mountain ranges of the Santa Cruz Mountains are lushly vegetated with evergreen forests. The oak chaparral of the Diablo Range to the east, together with the coastal mountains to the west, frame an urban landscape that has a wide variety of settings and amenities. Salt marshes and wetlands lie in the northwestern part of Santa Clara County, adjacent to the waters of the San Francisco Bay. Santa Clara County also has many natural rivers and streams, urban parks, and areas of architectural distinction.

Much of the valley floor was in agricultural use at one time. The northern portion of the Santa Clara Valley now is generally urbanized with built-out cities that also include urban parks and open space settings that improve the livability of the immediate environment. The generally undeveloped hillsides surrounding the valley are often visible from the urban center (Santa Clara County 1994). The southern portion of the valley, extending into San Benito County, is much more sparsely populated, and historic agricultural uses persist. The landscape includes rolling foothills, with riparian corridors surrounding creeks and wetlands bordering the valley.

Viewsheds

Views from the Santa Clara Valley floor primarily include the foothills, ridges, and/or summits of the Santa Cruz Mountains and the Diablo Range. The county's topography and ridgelines are highly variable. Along the eastern Diablo Range, prominent ridges generally run parallel to the Santa Clara Valley, from northwest to southeast. 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. This topography results in the Diablo Range being more visible from the valley than the Santa Cruz Mountains to the east (Santa Clara County 2005; 2006). The Lick Observatory, owned and operated by the University of California, is in the Diablo Range in eastern Santa Clara County, approximately 8 miles east of the nearest program pipelines (the Parallel East pipeline and Evergreen pipeline) (Figure 3.12-1).

Public open spaces with scenic vistas in the program area 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 in Santa Clara County (City of Santa Clara 2010), as well as topographic features such as Spikes Peak in Pacheco State Park in western Merced County (California State Parks 2015). Program pipelines traverse the boundaries of the following three open spaces, offering expansive scenic vistas:

- **Calero County Park.** Approximately 2.6 miles of the Calero Pipeline traverses northern Calero County Park, wrapping around the north side of Calero Reservoir. Approximately 0.3 mile of the Almaden Valley Pipeline also crosses into park property on the northwest corner.
- **Coyote Lake-Harvey Bear Ranch County Park.** Approximately 1.1 miles of the Santa Clara Conduit traverses the western edge of Coyote Lake–Harvey Bear Ranch County Park.
- **Pacheco State Park**. Approximately 3 miles of the Pacheco Conduit crosses Pacheco State Park.

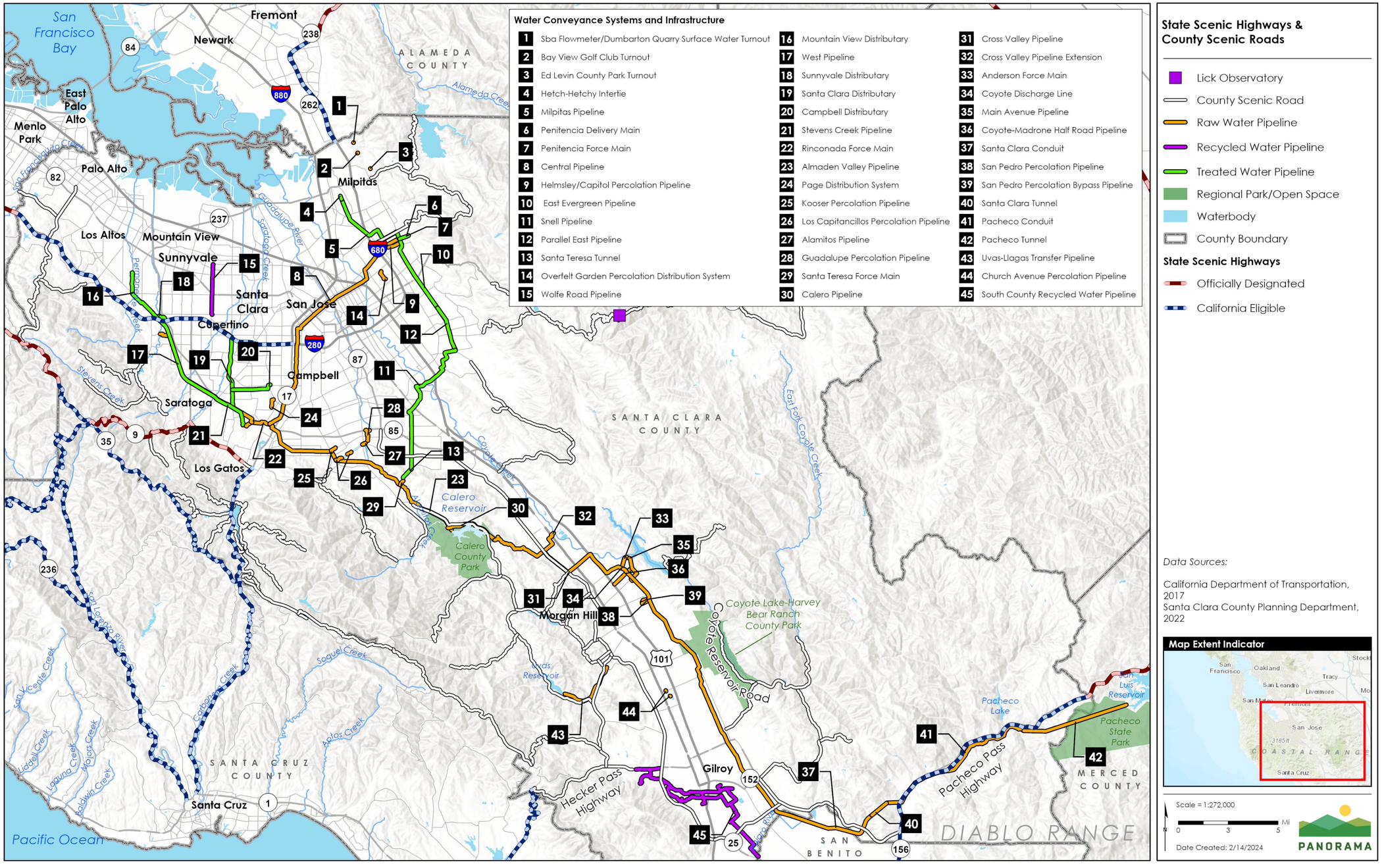
Additional information regarding open spaces and parks in the program area is provided in Section 3.16, Recreation.

Program Area Overview

As shown in Figure 3.12-1, most program pipelines are in the north and south valley, with some pipelines extending into the foothills that flank the valley (e.g., near the Calero Reservoir to the west, the Diablo Range in Merced County to the east).

In the northern portion of the program area, most of the pipelines were built on alluvial fans, foothill valleys, and alluvial floodplains. In the urbanized landscape in the north valley, pipelines are typically within utility easements, under major roadways in highly industrialized and commercialized areas such as along the Lawrence Expressway. However, some pipelines parallel or bisect recreational areas along urban creeks, such as Los Gatos Creek, Coyote Creek, and Guadalupe River. Pipeline discharge points can be in creeks that are near recreational parks and trails with aesthetic value. The vast majority of the program's water conveyance system is underground and not visible, with some facilities and appurtenances (e.g., pump stations, tanks, access vaults) visible aboveground in scattered parts of the program area. These aboveground facilities are generally for industrial use and are enclosed by security fencing.

Figure 3.12-1 Scenic Highways in the Program Area



Rural and semi-rural areas generally occur in the less developed southern portion of the program area, with agricultural land and recreational areas comprising the primary land uses. Such areas are generally considered to have high scenic quality, particularly when they occur within viewsheds of designated scenic routes or recreational trails and parks. Rural areas, in which Valley Water's water conveyance system is located, generally consist of rolling grassy foothills with minimal shrubs and scattered trees (mostly oak). Near Morgan Hill, land uses are primarily agricultural, generally consisting of grazing lands with some fruit orchards. Scenic vistas in rural areas include those areas within the viewsheds of parks, trails, open space, and county- or state-designated scenic routes.

State Scenic Highways and County Scenic Roads

Santa Clara County
From the San Mateo County–Santa Clara County border south to the interchange with Interstate (I)-880 and SR 17, I-280 is an eligible state scenic highway. As shown in Figure 3.12-1, this portion of I-280 bisects the West Pipeline and is approximately 300 feet east of the western terminus of the Sunnyvale Distributary.

Within Santa Clara County, State Highway 152 is also an eligible state scenic highway (Caltrans, n.d.; Santa Clara County 1994). As shown in Figure 3.12-1, the Pacheco Conduit crosses this portion of Highway 152 and runs adjacent to the roadway for several miles before diverging just west of Pacheco State Park.

SR-9 is the only State-designated scenic route in Santa Clara County. SR-9 is a two-lane rural highway as it enters Santa Cruz County from San Mateo County in the Santa Cruz Mountains. SR-9 does not bisect or run adjacent to any program pipelines.

Santa Clara County also maintains its own list of scenic roads, which includes 64 county-designated scenic roads (Santa Clara County 2003). Several pipelines are within viewing distance of county-listed scenic roads, including the Milpitas pipeline, Snell pipeline, Almaden Valley pipeline, Cross Valley pipeline, Cross Valley pipeline extension, Uvas-Llagas Transfer pipeline, Santa Clara Conduit, Pacheco Conduit, Pacheco Tunnel, and South County recycled water pipeline.

Merced County
In Merced County, Highway 152 is a State-designated scenic highway, from the Santa Clara County line on the east to the junction with I-5, along a 13.8-mile-long stretch (Caltrans, n.d.; Santa Clara County 1994). This section of Highway 152 would be the main access route for program-related work on the Pacheco Conduit in Merced County.

San Benito County
There are no State-listed scenic highways in San Benito County. However, State Highway 156, which is approximately 2 miles south of the Santa Clara Conduit, is an eligible state scenic highway.

Light and Glare

Existing sources of nighttime lighting and glare vary in the program area, based on intensity and type of land use. The urbanized and more densely populated areas in the northern portion of the Santa Clara Valley present more sources of nighttime lighting, while the agricultural regions in the southern portion of the valley and the open spaces to the east and west have fewer sources and are darker. Sources of nighttime lighting include:

- Residential, commercial, and institutional buildings
- Streetlights
- Parking area lights
- Automobile headlights
- Security lighting
- Area and decorative landscape lighting

Similar to nighttime lighting, persistent sources of glare are more prevalent in the developed portions of the program area. These sources of glare include window glass, polished steel architectural elements, and reflections from moving cars.

3.12.2 Regulatory Setting

Federal Regulations, Policies, and Standards

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

State Regulations, Policies, and Standards

Caltrans Scenic Highway Program

California's Scenic Highway Program was created by the State Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change, which would diminish the aesthetic value of the lands adjacent to these highways. Caltrans designates highways as scenic highways based on how much of the landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which views are compromised by development (Caltrans, n.d.).

Pacheco State Park General Plan

In 2006, the California State Park and Recreation Commission approved the General Plan for Pacheco State Park, which identifies the long-term vision and goals for the park and provides guidelines for protecting park resources. The park is home to various forms of aesthetic resources, including scenic trails and landscapes. The goals of the General Plan include working with Valley Water so that maintenance of the Pacheco Conduit does not interfere with park operations or significantly affect park resources (California State Parks 2006). The following General Plan goals pertain to aesthetic resources:

Parkwide Goals and Management: Resource Management (RES); Scenic/Aesthetic(RES-S)

Goal RES-S1: Preserve open scenic vistas onsite through recognition of undeveloped ridgelines.

Goal RES-S2: Maintain large expanses of open space free of visual and physical interruptions.

Goal RES-S4: Identify a common and unified set of site-related details and materials (gates, surface materials, fences, etc.) to ensure new facilities and infrastructure are compatible with the character of the site.

Goal RES-S5: Prevent aesthetic and environmental damage from duration and intensity of lighting and fixtures.

Goal RES-S6: Maintain and protect the dark nighttime sky for celestial viewing.

Local Regulations, Policies, and Standards

Santa Clara County

Santa Clara County General Plan

The Santa Clara County General Plan supports the designation of scenic roads that link the urban areas to rural and open space areas, with careful consideration of fire risks, hazards, and natural resources protection (Santa Clara County 1994). The following policies in the Santa Clara General Plan would apply to aesthetic resources as related to the PMP (Santa Clara County 1994):

Parks and Recreation Chapter

Policy C-PR37: 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.

Policy C-PR 38: Land use should be controlled along scenic roads so as to relate to the location and functions of these roads and should be subject to design review and conditions to assure the scenic quality of the corridor.

Policy C-PR 39: The visual integrity of the scenic gateways to the South County (Pacheco Pass, Hecker Pass, Route 101 south of Gilroy, and a Coyote greenbelt area north of Morgan Hill) should be protected.

Policy C-PR 45: Activities along scenic highways that are of a substantially unsightly nature, such as equipment storage or maintenance, fuel tanks, refuse storage or processing and service yards, should be screened from view.

Resource Conservation Chapter

Policy 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.

Policy C-RC 60: Hillsides, ridgelines, scenic transportation corridors, major county entryways, and other areas designated as being of special scenic significance should

receive additional consideration and protections due to their prominence, visibility, or symbolic value.

Policy C-RC 61: Public and private development and infrastructure located in areas of special scenic significance should not create major, lasting adverse visual impacts.

Santa Clara County Zoning Ordinance

The Santa Clara County Zoning Ordinance includes processes for ensuring quality design from a visual and aesthetic perspective, including through architectural and site approval and design review. The Zoning Ordinance does not identify an aesthetic or design requirement applicable to temporary construction activities. Chapter 3.30 of the Santa Clara County Zoning Ordinance outlines requirements for the Scenic Roads Combining District and lists the 64 roadways that are designated as scenic roads by the County (Santa Clara County 2003). The purpose of the Scenic Roads Combining District is to protect the visual character of scenic roads in the county through special development and sign regulations. The district encompasses all designated scenic roads in unincorporated Santa Clara County. The Zoning Ordinance does not identify visual or aesthetic restrictions on construction activities in the Scenic Roads Combining District.

General Plans of Incorporated Cities within Santa Clara County

The program area includes pipeline systems that traverse various incorporated towns and cities in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to visual resources:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2010)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (City of Los Gatos 2022)

The visual resource and aesthetic policies and guidelines in these general plans commonly encourage the conservation of existing natural viewsheds and visual continuity of development. Scenic preservation remains a strong aspect of the goals and policies of these local general plans. Based on a review of municipal general plans and zoning ordinances, no local jurisdictions place restrictions on temporary visual changes associated with temporary construction activities.

San Benito County

San Benito County General Plan

A small portion (approximately 2 miles) of the Santa Clara Conduit is in the northeast portion of unincorporated San Benito County and would be subject to the policies of the Natural and Cultural Resources Element of the San Benito County General Plan. The Natural and Cultural Resources Element is intended to ensure that facilities and services meet the needs of all residents and businesses. The goals and policies focus on providing goals, policies, and programs related to the management and conservation of scenic resources in San Benito County. The following policies would be relevant to the PMP activities in San Benito County (San Benito County 2015):

NCR-8.1: Protect Scenic Corridors: The County shall endeavor to protect the visual characteristics of certain transportation corridors that are officially designated as having unique or outstanding scenic qualities.

NCR-8.3: Grading within Scenic Corridors: The County shall review all projects involving grading within Scenic Corridors to protect valuable soil resources, preserve the natural environment, and avoid significant adverse impacts within scenic areas.

Merced County

Merced County General Plan

The Natural Resources Element of the Merced County General Plan contains goals and policies related to scenic resources, including the following (Merced County 2013):

Policy NR-4.1: Scenic Resource Preservation. Promote the preservation of agricultural land, ranch land, and other open space areas as a means of protecting the County's scenic resources.

Policy NR-4.2: Special Review Process for Structures Adjacent to Scenic Highways. Coordinate with Caltrans, during the review of proposed structures and activities located adjacent to State-designated scenic highways, to ensure that scenic vistas and local scenic values are not significantly degraded.

3.12.3 Impacts Assessment Methodology

The impacts presented in this section were evaluated qualitatively, based on the potential for implementation of the PMP to affect the public's scenic experience when viewed from or within scenic resources (e.g., scenic vistas, scenic highways) or substantially degrade or conflict with the visual character of a landscape. The degree of impact would depend on both the magnitude of change in the visual resource (i.e., visual character and quality) and the viewers' responses to and concern for those changes. Program implementation was evaluated based on the potential to impact the following viewer groups, who would be most likely affected by program activities: recreational users (pedestrians and cyclists), residents, workers, and motorists (drivers and passengers in cars or motorcycles).

As detailed in Chapter 2, Project Description, the scope of the PMP is limited primarily to inspection and maintenance of Valley Water's existing water conveyance systems and facilities and would not expand Valley Water's water conveyance infrastructure or system capacity. New appurtenances that would be installed as part of the program would be limited to small new permanent surge tanks and backup generators at existing program facilities. After completion of program activities, operation of the pipeline infrastructure would continue, unchanged from previous operation. Thus, the analysis herein is limited to program activities that have the potential to result in adverse physical impacts on visual resources. As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Tasks that would have the potential to impact visual resources include:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Excavation, backfill, construction, and other ground disturbance
- Repair of pipeline system infrastructure
- Vegetation management
- Bank stabilization and erosion control
- Non-ground disturbing repair

These actions are evaluated collectively in the impact analysis below.

Significance Criteria

The impacts of the program on visual resources would be considered significant if they exceed the following standards of significance:

- **Impact AES-1:** Have a substantial adverse effect on a scenic vista, substantially degrade the existing visual character or quality of public views in nonurbanized areas, or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- **Impact AES-2:** In urbanized areas, conflict with applicable zoning or other regulations governing scenic quality.
- **Impact AES-3:** Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's BMP Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's BMP Handbook does not contain any aesthetics- or visual resource-related BMPs applicable to the PMP.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the program to avoid or reduce impacts from program implementation.

Therefore, the impact analysis was conducted assuming application of these AMMs. The AMM applicable to aesthetics are shown in Table 3.12-3.

Table 3.12-1 Aesthetics-Specific AMM

AMM No.	AMM Requirements
AMM AES-1	**Avoid Staging Near Scenic Resources.** Valley Water will avoid establishing staging areas within 1,000 feet of any scenic resources, such as designated vista points along urban or rural trails, visible rock outcroppings, or designated historic buildings.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to aesthetics.

3.1.1 Impact Analysis

Impact AES-1: Have a substantial adverse effect on a scenic vista, substantially degrade the existing visual character or quality of public views in nonurbanized areas, or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (less than significant)

As stated previously, public open spaces that provide scenic vistas are present throughout the program area, including Almaden Quicksilver, Calero, Coyote Lake–Harvey Bear Ranch, Ed Levin, Mt. Madonna, Santa Teresa, and Upper Stevens Creek county parks, and Pacheco State Park. Program activities, particularly those requiring the use of heavy construction equipment, excavation, stockpiling of materials, and fencing, may be visible from scenic vistas in the program area, thereby altering the visual landscape. The scenic impact from program activities would depend on the proximity and line of sight from the scenic vista and dominant land uses in the vicinity of the program work site. In general, program activities would be more noticeable in rural and open space areas and less obvious and more consistent with the visual landscape in an urban environment.

The program area includes one State-designated scenic highway, SR-9, and three eligible State scenic highways, SR-152, SR-156, and I-280. Program-related activities may be visible from the scenic highways as motorists pass work sites. Program activities that may be visible from SR-9 and I-280 would be conducted within the highly developed portions of northern Santa Clara Valley, and they would not be visually distinct or highly noticeable. In the program area, SR-156 traverses relatively flat terrain and is approximately 2 miles from the nearest program pipeline (Santa Clara Conduit). Based on the distance from program work sites, flat terrain and the presence of intervening structures and vegetation obscuring motorists' views, program activities would not be visible along SR-156. The Pacheco Conduit crosses and parallels approximately 7.8 miles of SR-152. Mature trees and other vegetation are present along much of the eastern side of the highway, generally obscuring views of the pipeline alignment and

program work sites. Along various stretches where intervening vegetation is not present, and particularly where the Pacheco Conduit crosses the SR-152, program activities could be visible to motorists traveling along this portion of that roadway. However, views would be fleeting as motorists travel along SR-152; motorists would not have extended exposure to views of program activities. The portion of the program area in Merced County would not be visible from SR-152 because of the hills along the south side of highway that block views in that direction.

The program would continue Valley Water's existing maintenance practices, which consist of keeping pipeline rights-of-way (ROWs) free of shrubs and trees. Trees were removed during initial pipeline installation, and vegetation maintenance is ongoing along ROWs to ensure subterranean root systems do not damage infrastructure and preserve the integrity of the pipelines. Therefore, pipeline ROWs and structures are generally devoid of trees. In rare cases, tree or shrub removal may be necessary for construction on some of the older pipelines or pipeline segments. An occasional, isolated tree removal within a pipeline ROW would not substantially damage scenic resources nor would it change the visual character of existing ROWs for infrastructure.

Because the program would be limited to inspection and maintenance activities, any visual impacts (including those along designated scenic roadways) would be temporary and short term, occurring in increments from a few days to a few weeks. Program activities involving visible components (e.g., heavy construction equipment, excavation, stockpiling of materials) and fencing (e.g., maintenance for sections of buried pipelines) would not recur frequently in the same location because of the maintenance cycles and lifespans of the facilities. All program work sites would be returned to near pre-activity conditions at the completion of inspection and maintenance activities. Furthermore, program activities would occur along an existing pipeline alignment within public ROWs and would not involve damage to scenic resources such as rock outcroppings or historic buildings. As part of the program, Valley Water also would implement AMM AES-1, which would require program activities to avoid establishing staging areas within 1,000 feet of any scenic resources, such as designated vista points along urban or rural trails, visible rock outcroppings, or designated historic buildings. This measure would reduce the visibility of staging areas from scenic resources in the program area. Because staging areas would not be established near scenic resources and due to the temporary and short-term nature of program activities, program implementation would not have a substantial adverse effect on a scenic vista and would not substantially degrade or damage the existing visual character, quality of public views, or scenic resources in the program area. The impact would be **less than significant**.

Significance Determination:
Less than Significant

Mitigation
No mitigation would be required for Impact AES-1.

Impact AES-2: In urbanized areas, conflict with applicable zoning or other regulations governing scenic quality (less than significant)

As presented in Section 3.12.2, Applicable Regulations, Policies and Standards, local zoning ordinances and general plans relevant to the program area commonly include policies and regulations to maintain the quality of scenic resources. For example, the Santa Clara County Zoning Ordinance includes regulations for areas such as the Santa Clara Valley Viewshed and the Milpitas Hillsides. The guidance and goals include mitigation of adverse effects on visual resources and landscapes. Chapter 3.20 of the ordinance highlights significant effects on visual quality and character within the specified regions. For instance, within the Scenic Roads Combining District, the guidance is intended to minimize visual impacts of activities on the natural landscape (Santa Clara County 2003).

Urban areas within the program area are limited to portions of unincorporated Santa Clara County and cities within Santa Clara County. Santa Clara County and City jurisdictions in the program area do not have general plan or zoning policies governing temporary visual changes associated with construction activities (e.g., the presence of construction equipment, fencing, materials). Therefore, the program would not have the potential to conflict with goals or policies within those jurisdictions.

Because program activities would not conflict with applicable zoning or other regulations governing scenic quality, the impact would be **less than significant**.

Significance Determination:
Less than Significant

Mitigation
No mitigation would be required for Impact AES-2.

Impact AES-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area (less than significant with mitigation incorporated)

As discussed in Chapter 2, Project Description, program activities typically would be conducted during daytime hours. However, on limited occasions, extended nighttime construction work hours may be required. To maintain visibility, security, and safety of crews, use of temporary lighting would be required during nighttime construction activities. Depending on the location of the program work site, temporary lighting may be visible from nearby public roads or vantage points. This would constitute a new source of substantial nighttime lighting, adversely affecting nighttime views in the program area. The impact would be **significant**.

Temporary construction lighting that is used on limited occasions would not impact views from the Lick Observatory. The observatory is approximately 8 miles east of the nearest pipelines, which are in a developed area in San Jose. Limited temporary construction lighting within a developed area with existing nighttime lighting would not create a new source of substantial light or glare that would adversely affect nighttime views from the Lick Observatory.

Significance Determination:
Less than Significant with Mitigation Incorporated

Mitigation

> **MM AES-1: Low Illumination Nighttime Lighting.** Whenever possible, work hours will be limited to 7:00 a.m. to 7:00 p.m. Monday through Saturday. When program activities are required beyond this time frame and require nighttime lighting, lighting will conform to restrictions of the relevant local jurisdiction. Measures such as directing lighting downward and away from residences and traffic, reducing bulb wattage to the minimum required, and using shrouds will be implemented.

Significance after Mitigation
To reduce the impact of temporary construction lighting on nighttime views, Valley Water would implement MM AES-1, which would require Valley Water or its contractors to limit nighttime construction activities to the extent feasible. If nighttime construction is determined to be required, nighttime lighting would conform to local restrictions and would be required to direct lighting downward and away from residences and traffic, use minimum bulb wattage, and use shrouds on light fixtures. The impact would be **less than significant with mitigation incorporated**.

3.13 Wildfire

This section provides an overview of wildfire and the wildfire potential in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts related to wildfire from program implementation.

3.13.1 Environmental Setting

Overview

A wildfire is an unplanned and uncontrolled fire in a natural area of combustible vegetation, such as grasslands, woodlands, bushlands, scrublands, peatlands, and other wooded areas where the vegetation acts as a source of fuel or combustible material. The source of wildfires can be traced to both natural causes, such as lightning strikes and sparks from rockfalls, and human activities, such as machinery/electric wire sparks, campfires, controlled agricultural burns, and cast-away cigarette butts. Structures may become involved if a wildfire spreads to adjacent communities.

Since the 1980s, the size and intensity of wildfires in California have notably increased. Historic wildfire regimes—including the pattern, timing, duration, and intensity in which fires naturally have occurred—have changed, related to climate change and decades of management actions including wildland fire suppression and human expansion into the wildlands. Climate change has amplified drought frequency and severity, increased the number of dead trees in forests from disease and infestation, and increased the length of wildfire season (CDFW 2023).

Wildfire Susceptibility for the Program Area

The primary factors that increase an area's susceptibility to wildfire are vegetation type and condition; weather, including atmospheric conditions; and topography, including slope and aspect (National Wildfire Coordinating Group 2008).

The program area includes pipeline systems throughout Santa Clara County as well as limited sections of eastern Merced County and San Benito County, in which a 2.5-mile segment of the Pacheco Conduit and 2-mile segment of the Santa Clara Conduit pipeline are located, respectively.

Vegetation

The vegetation type and condition present in a landscape drastically affect the wildfire risk and intensity. Vegetation fuel types include grasses, shrubs, and timber and can generally be defined as light, medium, or heavy fuels (National Wildfire Coordinating Group 2008). Vegetation types found in the program area include grasslands, scrublands and chaparral, oak woodlands, riparian forests and scrub, wetlands and open water, irrigated agriculture, and developed areas. Section 3.3, Biological Resources, provides detailed descriptions of vegetation types and land covers in the program area.

Weather

Weather can be described as the state of the atmosphere over the surface of the earth and is caused by the interaction of temperature, relative humidity, precipitation, and wind. Santa Clara County, which includes the majority of the program area, has a Mediterranean climate, staying temperate year-round, and warm and dry through late spring, summer, and early fall. The bulk of the annual precipitation occurs during the winter months, with virtually no precipitation occurring from spring through fall. Because of the large geographic extent of the county, annual rainfall averages are variable, depending on topography and local orographic and rain shadow effects. The Santa Cruz Mountains typically have the highest precipitation totals (40 to 60 inches per year), compared to the relatively dry Santa Clara Valley, where the city of San Jose has an average annual total of 12 inches. The Diablo range experiences precipitation ranging from 20 to 30 inches per year, especially at higher elevations. Various microclimates also occur in the county (SWCA 2016). Over the course of a year, the temperature in the city of Santa Clara (which is centrally located in the program area) varies from approximately 43 to 80 degrees Fahrenheit and is rarely below 35 degrees or above 90 degrees (Weather Spark, n.d.-b).

Western Merced County has its own microclimate, with temperatures ranging from 95 to 105 degrees and a humidity percentage ranging from the low teens to single digits (Merced County 2013). In the city of Hollister (the closest city to San Benito County's northern border), the temperature varies from 38 degrees to 84 degrees and is rarely below 30 degrees or above 94 degrees (Weather Spark, n.d.-a).

Topography and Wind

The general features of the earth's surface have a tremendous impact on the way a wildfire behaves. An area's topography can affect a fire's intensity as well as the rate and direction of speed. In addition, the rate and direction of fire spread are most influenced by wind speed and direction.

The program area is south of the San Francisco Bay and comprises Santa Clara Valley (which is fringed on the east by the Diablo Range and on the west by the Santa Cruz Mountains), a portion of the Coast Range Mountains where the Santa Clara Conduit dips into San Benito County, and the San Joaquin Valley near the Merced County portion of the Pacheco Conduit. The topography and proximity to the Pacific Ocean greatly influences wind patterns in the program area. The prevailing flow along the Santa Clara Valley is roughly parallel to the valley's northwest-southeast axis. During the afternoons and early evenings, a north-northwesterly sea breeze often extends up Santa Clara Valley, while a light south-southeasterly drainage flow often occurs during late evenings and early mornings. In summer, a convergence zone occasionally occurs in the southern end of the Santa Clara Valley between Gilroy and Morgan Hill, when air flowing from the Monterey Bay through the Pajaro Gap gets channeled northward into the south end of the Santa Clara Valley and meets with the prevailing north-northwesterly winds. The greatest wind speeds occur in spring and summer, with occasional strong afternoon and evening winds on summer days (SWCA 2016).

The most influential wind pattern on wildland fires spread in the Bay Area is an offshore wind that flows northeasterly over Northern California's coast ranges, referred to as the Diablo winds. Diablo wind events are a downslope wind that originate from the interior northern Great Basin. A strong pressure gradient is created as the winds flow northeasterly to lower pressure near the California coast that produces a strong, hot wind with low relative humidity (lower than 30 percent). Diablo winds are most frequent during fall to early winter, and in particular in October, when the fuel moisture content is low. The summer Diablo winds can carry hot, dry air from the Central Valley over the Diablo Range and flow across Santa Clara Valley and then upslope over the Santa Cruz Mountains from a northerly direction toward the Monterey Bay (SWCA 2016).

Southeast of Gilroy, where the Santa Clara Conduit crosses into San Benito County, the topography along this 2-mile stretch is relatively flat, with elevations ranging from approximately 148 to 169 feet. The remaining approximately 15 miles of pipeline include the Santa Clara Conduit, Santa Clara Tunnel, and Pacheco Conduit, which extend across the southeastern portion of Santa Clara County along the Pacheco Pass Highway and into the western portion of Merced County at Pacheco State Park. The topography in this region consists of ridgelines and hillside terrain, where the elevation can reach up to 1,867 feet. During the March through October "wind season," high winds pass through Pacheco Pass. The Pacific Ocean continues to play a significant role in the weather patterns at Pacheco State Park and surrounding areas due to coastal air currents moving across Pacheco Pass (California State Parks 2015)

CAL FIRE-Designated Wildfire Hazard Severity Zones

Fire Hazard Severity Zones (FHSZs) are mapped fire hazard areas in California, through the California Department of Forestry and Fire Protection's (CAL FIRE) Fire and Resource Assessment Program (FRAP). FRAP is a science-based and field-tested model that assigns hazard scores to different areas in the state based on factors that influence fire likelihood and behavior, such as fire history, existing and potential fuel (natural vegetation), development density, predicted flame length, blowing embers, terrain, and typical fire weather for an area. Using FRAP, CAL FIRE assigns areas as very high FHSZs, high FHSZs, and moderate FHSZs. FHSZs are used in fire planning, including in establishing property development standards such as road widths, defensible space, water supply, and signage requirements, and for implementing wildland-urban interface (WUI) building standards for new construction to reduce risk associated with wildland fires. State law also requires cities and counties to pay special attention to very high and high FHSZs in their general plans.

CAL FIRE has designated Draft FHSZs for both State Responsibility Areas (SRAs) and Local Responsibility Areas (LRAs). SRAs are the official boundaries where CAL FIRE is the primary emergency response agency responsible for fire suppression and prevention (Board of Forestry and Fire Protection, n.d.). Incorporated cities and lands under federal ownership are not included in the SRA. LRAs include incorporated cities and densely populated areas. Fire protection within these areas is typically provided by city fire departments, fire protection districts, and counties, as well as by CAL FIRE under contract to local governments. A detailed

description of fire protection services in the program area is provided in Section 3.17, Public Services. Federal Responsibility Areas (FRAs) are the responsibility of a federal government agency, such as the U.S. Bureau of Reclamation (BOR), for fire protection on federally owned land (California Department of Forestry and Fire Protection (CAL FIRE), n.d.-a).

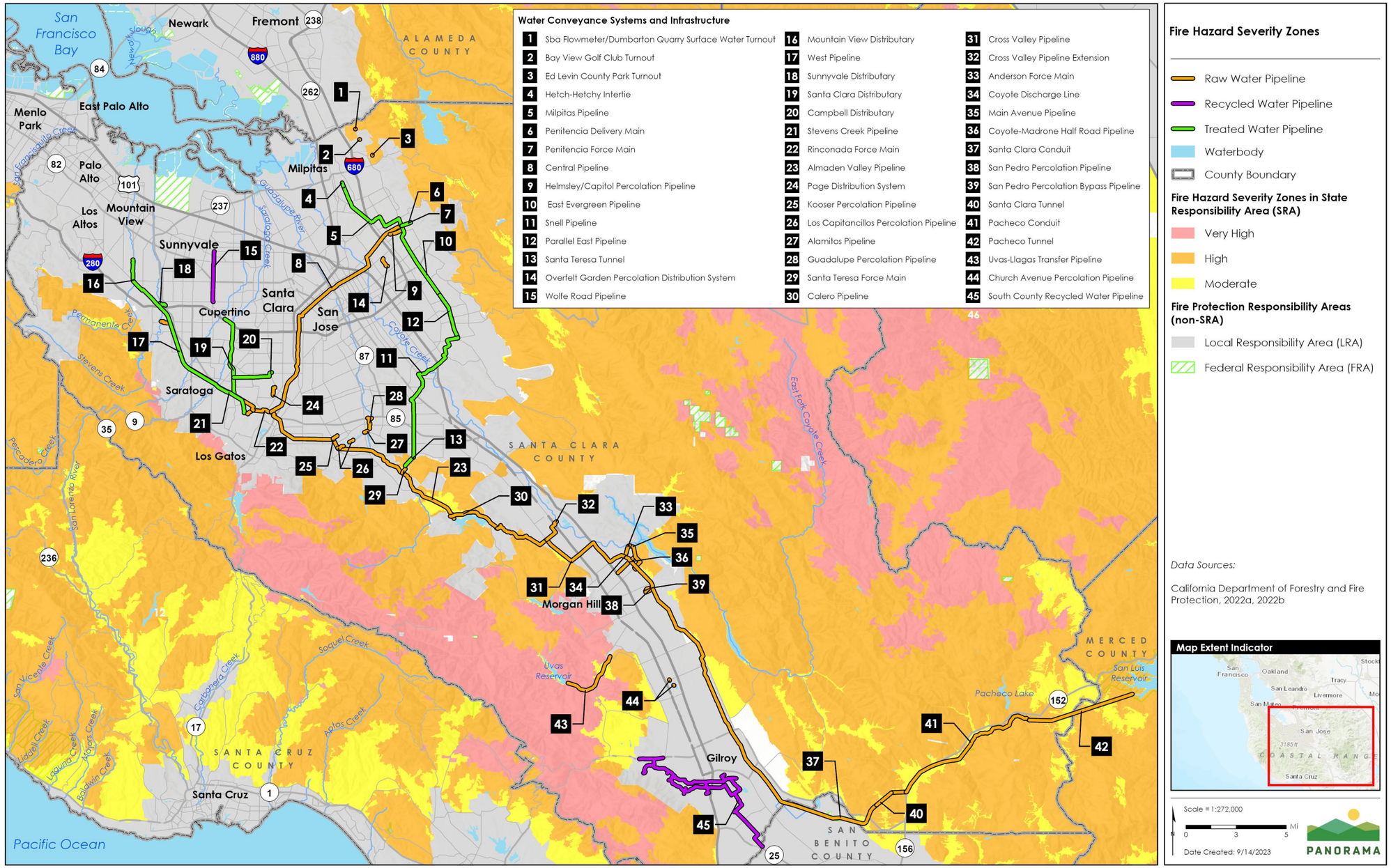
As shown in Figure 3.13-1, the PMP conveyance pipelines in the northern extent of Santa Clara County (north of the town of Los Gatos) are entirely in LRAs. The southern extent of Santa Clara County, which is less urbanized, includes a mix of LRAs with portions of pipeline within Moderate and High FHSZs. A 3-mile pipeline segment (the Uvas-Llagas Transfer Pipeline) is just south of Morgan Hill and within a Very High FHSZ. Although the South County Recycled Water Pipeline in and around Gilroy primarily fall within an LRA designation, the area is surrounded by lands designated as Moderate and High FHSZs. The San Benito County portion of the Santa Clara Conduit is in an LRA and a Moderate FHSZ. The Merced County portion of the Pacheco Conduit is within Moderate and High FHSZs. Both the Pacheco Conduit and Santa Clara Conduit have portions of pipeline that cross into FRAs that are owned by the BOR.

CAL FIRE-Designated Wildland-Urban Interface

The WUI is defined as the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (Board of Forestry and Fire Protection 2018). The combination of increasing development in or near wildlands, the accumulation of wildland fuels, dry fire seasons, and rugged terrain has resulted in significant risk from wildfire to communities in or near the WUI (SWCA 2016). As shown on Figure 3.13-2, the majority of PMP conveyance pipelines south of the town of Los Gatos are in the WUI or just outside it, in rural, vegetated areas.

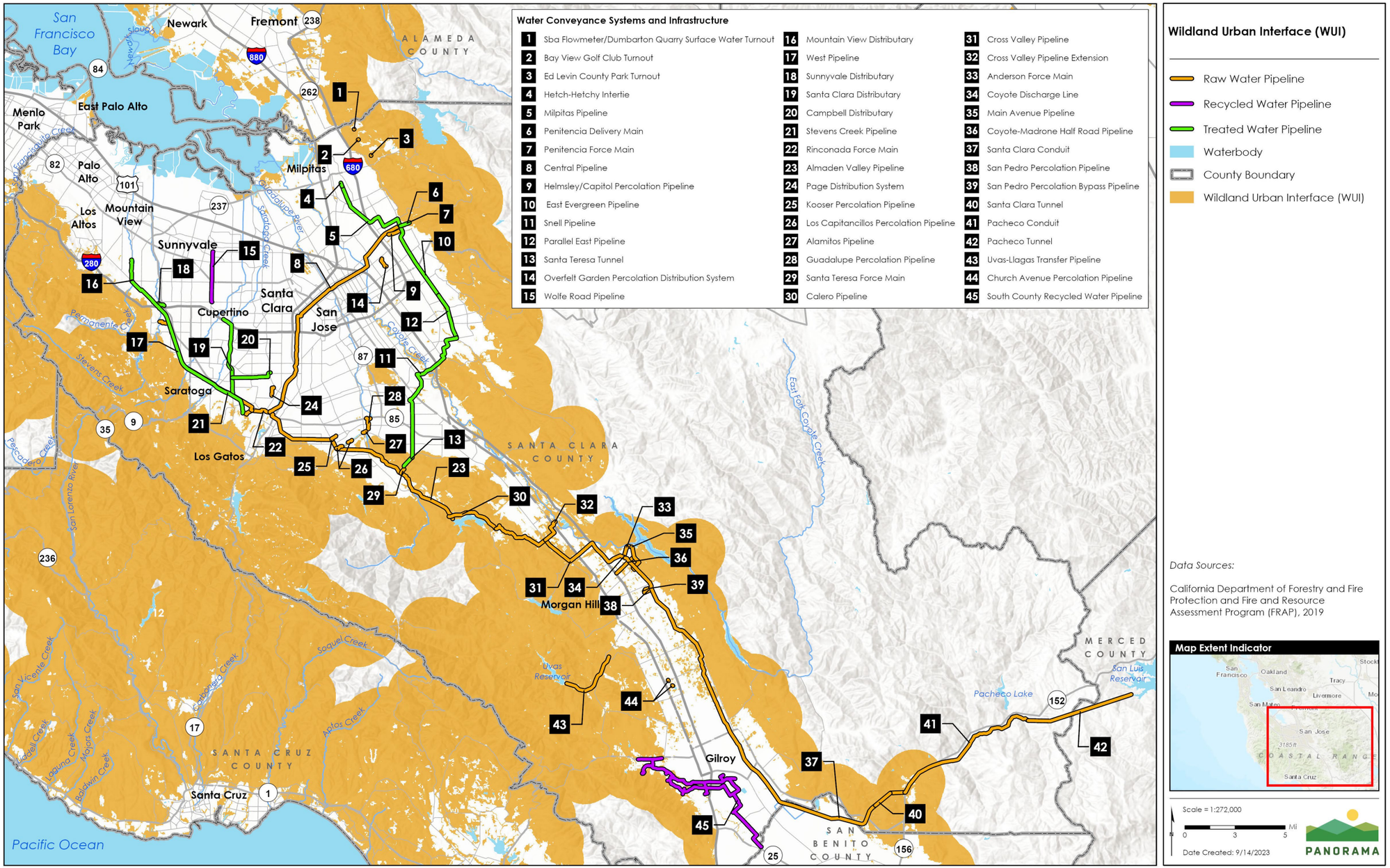
Recent fires include the 72-acre Cochrane Fire (August 2023), 93-acre Luis Fire (April 2021) that occurred immediately east of the San Luis Dam, and the 2,100-acre Pass Fire (June 2020), which started on Dinosaur Point Road at the Santa Clara/Merced County line, approximately 0.6 mile north of the Pacheco Conduit.

Figure 3.13-1 Fire Hazard Severity Zones



Source: California Department of Forestry and Fire Protection 2022a; 2022b

Figure 3.13-2 Wildland-Urban Interface



Source: FRAP 2019

Future Fire Regime

Although wildfires have been a natural part of California's ecosystems for centuries, they are becoming bigger and more destructive, and massive quick-spreading wildfires are becoming more frequent (Covington and Pryne 2020). Many factors are contributing to the changes, including long-term drought, changes in vegetation type and fuel loading, changing temperature and meteorological conditions, more homes in the WUI, and increases in human -caused ignitions. Together, these climatic and human-driven changes have led to a shift in the wildfire regime in California. Continual pressures on the factors listed above—such as rising temperatures, longer term drought conditions, and continual expansion of human influence in perimeter wildland areas—are expected to intensify wildfires in California throughout the middle of the twenty-first century (Board of Forestry and Fire Protection and CAL FIRE 2018).

3.13.2 Regulatory Framework

Federal Regulations, Policies and Standards

Federal Wildland Fire Management Policy

The 1995 Federal Wildland Fire Management Policy, which was updated in 2001, was developed to standardize federal policies and programs related to wildland fire across all federal land management agencies. This document identifies wildland fire protection priorities, establishes goals for prescribed fires to reduce the risk of catastrophic wildland fire on federal land, requires the development of area-specific fire management plans, and establishes the roles and responsibilities of federal agencies in the concerted effort to reduce wildland fire risk (DOI 1995; DOI 2001).

State Regulations, Policies and Standards

2018 Strategic Fire Plan for California

Developed by the Board of Forestry and Fire Protection (the Board), the 2018 Strategic Fire Plan for California (2018 Plan) outlines the goals and objectives to implement CAL FIRE's overall policy direction and vision. The 2018 Plan demonstrates CAL FIRE's focus on: (1) fire prevention and suppression activities to protect lives, property, and ecosystem services: and (2) natural resource management to maintain the state's forests as a resilient carbon sink, to meet California's climate change goals and serve as important habitat for adaptation and mitigation (California Department of Forestry and Fire Protection (CAL FIRE), n.d.-b). Unit Plans are developed and updated to implement the programs and goals of the 2018 Plan. Through the 2018 Plan, CAL FIRE implements and enforces the policies and regulations set forth by the Board and carries forth the mandates of the Governor and the Legislature (Board of Forestry and Fire Protection 2018).

California's Wildfire and Forest Resilience Action Plan

The Wildfire and Forest Resilience Action Plan is designed to strategically accelerate efforts to restore the health and resilience of California forests, grasslands and natural places, improve the fire safety of communities; and sustain the economic vitality of rural forested areas (Forest

Management Task Force 2021). The plan addresses topics such as forest restoration, expanding the use of prescribed fire, and improving community wildfire resilience. The key goals and actions laid out in the plan identify actions to be taken by the State, as well as federal agencies with forest management roles (such as the U.S. Forest Service); the plan does not prescribe actions that must be taken by local agencies or water utilities.

California's Strategic Plan for Expanding the Use of Beneficial Fire

California's Strategic Plan for Expanding the Use of Beneficial Fire (Strategic Plan) is intended to guide the expansion of beneficial fire across the state through 2025, as set forth in California's Wildfire and Forest Resilience Action Plan (California Wildfire and Forest Resilience Task Force 2022). The Strategic Plan provides a roadmap for significantly increasing the pace and scale of prescribed fire, cultural burning, and fire managed for resource benefit. The Strategic Plan establishes acreage targets for a broad spectrum of state and federal agencies, California Native American tribes, and nongovernmental partners. Under this Strategic Plan, land managers seek to deploy beneficial fire on 400,000 acres annually by 2025. The Strategic Plan identifies goals related to workforce training, leveraging private landowner interest in prescribed fire, and reducing regulatory barriers for beneficial fire. The Strategic Plan does not establish specific geographic priorities for beneficial fire.

California Emergency Plan

Pursuant to the Emergency Services Act (California Government Code Section 8550 et seq). California has developed an Emergency Plan to coordinate emergency services provided by federal, State, and local government agencies and private individuals. Response to wildfires is one part of the Emergency Plan. The Emergency Plan is administered by the State's OES. The OES coordinates the response of other agencies, including the U.S. Environmental Protection Agency, California Highway Patrol, California Department of Fish and Wildlife, the Regional Water Quality Control Boards (in this case, the San Francisco Bay Regional Water Quality Control Board), the local air districts, and other local agencies. The Emergency Plan defines the policies, concepts, and general protocols for the proper implementation of California's Standardized Emergency Management Systems (SEMS). The SEMS is an emergency management protocol that agencies in California must follow during multiagency response efforts, whenever State agencies are involved (Cal OES 2017).

California Fire Code

The California Fire Code is Part 9 of the California Code of Regulations under Title 24, also referred to as the California Building Standards Code. The purpose of the California Fire Code is to establish the minimum requirements consistent with nationally recognized good practices to safeguard public health, safety, and general welfare from the hazards of fire, explosions, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. This code establishes regulations affecting or relating to buildings, structures, processes, premises, and a reasonable degree of life and property safeguards regarding fire hazards, fire suppression, or alarm systems, and conditions affecting the safety of emergency responders (UpCodes 2022).

California Public Resources Code
Sections 4290 and 4291 of the PR) pertain to minimum fire safety standards related to defensible space that are applicable to SRA lands under the authority of CAL FIRE, and to lands classified and designated as very high FHSZs. The PRC requires maintenance of a 100-foot defensible space, with space from each side and from the front and rear of a structure, but not beyond the property line. Other defensible space requirements include vegetation management of trees and shrubs, and maintenance of roofs by removing vegetative materials (California Public Resources Code 1965; California Legislative Information, n.d.).

California State Hazard Mitigation Plan
The 2018 California Hazard Mitigation Plan represents the State's primary hazard mitigation guidance document and is composed of comprehensive and valuable input provided by State Hazard Mitigation Team members and stakeholders. The State Hazard Mitigation Plan continues to build on the State's commitment to reduce or eliminate potential risks and impacts of natural and human-caused disasters, to help communities and their mitigation and disaster resiliency efforts. The State Hazard Mitigation Plan includes an updated statewide risk assessment, disaster history, and statistics; recent mitigation progress, success stories, and best practices; updated State hazard mitigation goals, objectives, and strategies; and updated climate mitigation progress and adaptation strategies (Cal OES, n.d.).

Local Regulations, Policies and Standards

CAL FIRE 2023 Strategic Fire Plans
The CAL FIRE 2023 Strategic Fire Plans for the Santa Clara Unit, Madera/Mariposa/Merced Unit and San Benito/Monterey Unit (Merced County 2013) are intended as a planning and assessment tool to identify and prioritize pre-fire and post-fire management strategies and tactics that are meant to reduce the loss of values at risk within each respective unit. The 2023 Strategic Fire Plans identify values, goals, and objectives; present an ignition analysis; and discuss priority landscapes, unit preparedness and firefighting capabilities, fire prevention, and vegetation management (Merced County 2013).

San Francisco Bay Area Regional Emergency Coordination Plan
The San Francisco Bay Area Regional Emergency Coordination Plan provides an all-hazards framework for collaboration among responsible entities and coordination during emergency in the San Francisco Bay Area. The Regional Emergency Coordination Plan defines procedures for regional coordination, collaboration, decision-making, and resource sharing among emergency response agencies in the Bay Area (Cal OES et al. 2008).

Santa Clara Valley Water District Local Hazard Mitigation Plan
Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented. Valley Water participates in the Multijurisdictional Hazard Mitigation Plan prepared by the Santa Clara County OEM.

Valley Water is in the process of updating its 2017 LHMP and received approval of the plan from the FEMA. FEMA approval for the current LHMP was for a 5-year period, from May 2, 2018, to May 2, 2023. The goal of the 2017 LHMP is to maintain and enhance a disaster-resistant region by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters (Valley Water 2017). The LHMP includes strategies to mitigate wildfire risks, such as maintaining fire breaks along Valley Water facilities.

Santa Clara County Community Wildfire Protection Plan

The Santa Clara County Community Wildfire Protection Plan (CWPP) is a countywide strategic plan with goals for creating a safer WUI community, accompanied by report annexes that address specific issues and projects by jurisdiction and stakeholder organizations to meet the strategic goals. The purpose of the CWPP is to assist in protecting human life and reducing property loss from wildfire throughout the planning area. The plan is the result of a community-wide wildland fire protection planning process and the compilation of documents, reports, and data that were developed by a wide array of contributors (SWCA 2016).

Santa Clara County General Plan

Adopted in 1994, the Santa Clara County General Plan, 1995–2010, guides wildfire hazard mitigation efforts for the county. The Health and Safety Chapter of the General Plan specifically provides historical evidence, risk factors, and acknowledgement of fire hazards in Santa Clara County (Santa Clara County 1994)

General Plans of Incorporated Cities within Santa Clara County

Each of the following incorporated cities or towns in Santa Clara County have general plans that contain policies and planning strategies related to wildfires:

- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of San Jose (City of San Jose 2011)
- City of Saratoga (City of Saratoga 2007)
- Town of Los Gatos (Town of Los Gatos 2022)

The wildfire hazard policies and guidelines in these general plans commonly encourage interagency partnerships and coordination with other surrounding public entities, including Valley Water, to establish, maintain, and operate fire hazard practices in the area.

Merced County General Plan

Adopted in 2013, the Merced County General Plan addresses wildfire hazards in the county. The Health and Safety Element of the plan guides fire hazard mitigation measures in Merced County, such as fire suppression, vegetation, and emergency equipment access (Merced County 2013).

San Benito County General Plan
Adopted in 2015, the San Benito County General Plan addresses wildfire hazards in the county. The Health and Safety Element of the plan outlines policies such as requiring fire-resistant vegetation, guidelines on development in fire hazard zones, and implementation of a county-wide community wildfire protection plan (San Benito County 2015).

3.13.3 Impact Assessment Methodology

The impacts presented in this section were evaluated qualitatively, based on the potential for program activities to impair emergency response, exacerbate wildfire risk, or expose people or structures to significant risks from wildfires.

As detailed in Chapter 2, Project Description, the scope of the program is limited to inspection and maintenance of Valley Water's existing water conveyance systems and facilities. No new or expanded infrastructure would be constructed or operated under the program. After completion of inspection and maintenance activities, operation of the PMP pipelines and associated facilities would continue, unchanged from previous operation. Therefore, the analysis herein is limited to maintenance and inspection activities that potentially could result in impacts related to wildfire.

Significance Criteria

The impacts of the program related to wildfire would be considered significant if they exceed the following standards of significance if located in or near SRAs or lands classified as very high FHSZs:

- **Impact WIL-1:** Substantially impair an adopted emergency response plan or emergency evacuation plan.
- **Impact WIL-2:** Exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- **Impact WIL-3:** 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.
- **Impact WIL-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.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's BMP Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. These BMP conditions are included as part of the program, and the impact analyses were conducted assuming application of these practices and conditions. The following wildfire-related BMPs from Valley Water's BMP Handbook are applicable to the program:

- BMP HM-12: Incorporate Fire Prevention Measures

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement certain AMMs as part of the PMP to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMM applicable to wildfire is shown in Table 3.13-1.

Table 3.13-1 Wildfire-Related AMM

AMM No.	AMM Requirements
AMM TRA-1	**Traffic Control Plan.** For program activities requiring encroachment into a city, county, or State-owned road, Valley Water or its contractor shall prepare a Traffic Control Plan (TCP). The TCP shall be prepared by a California-licensed Traffic Engineer or licensed civil professional engineer and conform to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and the Manual on Uniform Traffic Control Devices. At a minimum, the TCP shall include the following elements: • Circulation and detour plans to minimize impacts on local street circulation (haul routes will minimize truck traffic on local roadways to the extent possible). • A description of emergency response vehicle access (an alternate route shall be identified if the road or area is completely blocked, preventing access by an emergency responder). • Procedures to schedule construction activities in a manner that will minimize overlapping construction phases that require truck hauling to the extent feasible. • Identification of staging areas that will be designated for storage of all equipment and materials in a manner that minimizes obstruction to traffic. • Identification of designated construction worker parking locations. • Procedures for use of temporary signs, flashing lights, barricades, flaggers, and other traffic safety personnel or devices where required to control or direct the flow of traffic. • Temporary traffic marking installation requirements where required to direct the flow of traffic (traffic markings will be maintained for the duration of road/lane closure and removed when completed). • Procedures to keep sidewalks and bicycle lanes open for pedestrians and cyclists, respectively, to the extent safe, or identification of detour routes and signing if sidewalks or bicycle lanes will be closed. • Procedures to maintain driveway access to residences or businesses unless other arrangements are made. A minimum of 12-foot-wide travel lanes will be maintained unless otherwise approved by Valley Water and/or an agency with encroachment jurisdiction. Valley Water or its contractors will submit the TCP to the agency with encroachment jurisdiction in advance of program activities, to provide the agency with the opportunity to review the TCP and

AMM No.	AMM Requirements
	provide additional or alternative recommendations as appropriate. The contractor must submit documentation to Valley Water that the plan has been approved by the appropriate jurisdictional agency prior to the commencement of construction.

Santa Clara Valley Habitat Plan Conditions
As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to wildfire.

3.13.4 Impact Analysis

Impact WIL-1: Substantially impair an adopted emergency response plan or emergency evacuation plan (less than significant)

Refer to Impact HAZ-6 in Section 3.4, Hazards and Hazardous Materials, for a discussion on the program's potential to substantially impair an adopted emergency response plan or emergency evacuation. As described there, Valley Water would implement a number of program-specific AMMs, including AMM TRA-1, which would require development and implementation of a Traffic Control Plan to minimize the potential for program lane or road closures to physically interfere with an emergency plan or evacuation plan. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact WIL-1.

Impact WIL-2: Exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire (less than significant)

Program implementation would reduce the overall risk of wildfire in the program area. As described in Chapter 2, Project Description, the PMP Manual specifically includes vegetation management in and around existing PMP facilities as a covered activity to improve wildfire resiliency for Valley Water's infrastructure. As part of the program, Valley Water would conduct year-round vegetation maintenance (e.g., tree and shrub removal, goat grazing, fire break installation) around water conveyance structures and components, and at access points to support initiatives such as public safety, fire management, and fire fuel reduction.

As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. Some of these tasks have the potential to ignite fires, thereby resulting in impacts related to wildfire. These tasks include the following:

- Setup, staging, and access

- Excavation, construction, and other ground disturbance
- Pump-out of vaults/manholes, dewatering, refilling
- Repair of pipeline system infrastructure

Particularly in areas where vegetation may act as fuel for wildfires, sources of ignition include driving overland, field staff smoking and improperly disposing of cigarettes, and sparks from welding activities. As discussed above, topography in the program area is generally flat in Santa Clara County, except for the mountainous areas near the Santa Clara/San Benito county border and along the Pacheco Pass into Merced County. Hot, dry summer Diablo winds in the Central Valley and San Joaquin Valley could contribute to the uncontrolled spread of a wildfire, as well as carry pollutant concentrations to communities to the northeast. As described in Chapter 2, Project Description, Valley Water would implement specific BMPs as part of the program, including BMP HM-12, which includes fire prevention measures that would apply to all PMP tasks. BMP HM-12 requires that all earthmoving and portable equipment with internal combustion engines be equipped with spark arrestors and prohibits smoking except in designated staging areas and away from combustible materials. These requirements would reduce the potential for accidental ignition at program work sites and worker presence in wildfire-prone areas. BMP HM-12 also requires that appropriate fire suppression equipment be available at the work site during periods of high fire danger and when spark-generating activities are occurring (such as welding or metal grinding). BMP HM-12 would thereby enable swift emergency response in the event of an accidental ignition. Because BMP HM-12 includes measures to prevent accidental ignition associated with program activities and require appropriate fire suppression equipment be present at program work sites, program activities would not exacerbate wildfire risks due to slope, prevailing winds, or other factors. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact WIL-2.

Impact WIL-3: 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 (less than significant)

Similar to the existing PMP, the program would involve activities to maintain existing infrastructure, such as access roads, water tanks, and pipelines, as well as non-infrastructure features such as fuel breaks. However, maintenance of this infrastructure would not exacerbate fire risk and instead would improve the infrastructure's wildfire resiliency by managing vegetation and reducing fuel loads, maintaining access roads which provide access and act as fuel breaks, as well as ensuring that a reliable water supply for firefighting is available in the program area. Therefore, the impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact WIL-3.

Impact WIL-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)

The program's potential to result in landslides is discussed in Section 3.2, Geology and Soils. Flooding hazards are discussed in Section 3.1, Hydrology and Water Quality. Post-fire impacts would be similar to the potential flooding or landslide impacts discussed in those sections because the majority of pipelines in the program area are in the Santa Clara Valley, which has relatively flat topography and would not be susceptible to post-fire slope instability. The southern portion of the Almaden pipeline, Calero pipeline, and Cross Valley pipeline all border hillsides and steeper terrain, and they are in areas that are sparsely populated, with few structures susceptible to fire. The Santa Clara Conduit, Santa Clara Tunnel, and Pacheco Conduit are in areas of relatively steep slopes, where the alignments climb into the mountains along the Pacheco Pass and Pacheco State Park. Although the Pacheco Pass area is generally undeveloped and protected as a state park, these steeper slopes would allow fire to spread quickly upward and burned hillsides could create risks from runoff, post-fire slope instability, or drainage changes.

Program activities would be performed at existing facilities on previously disturbed land, and risks to people or surrounding structures related to post-fire flooding and landslides would not change from existing conditions. Certain program activities would occur in steeply sloping areas due to the location of existing facilities. As described in Chapter 2, Project Description, Valley Water would implement its BMPs as part of the program, including BMP HM-12, which includes fire prevention measures that would apply to all PMP tasks. BMP HM-12 requires precautions to prevent accidental ignition during program activities and to enable swift response in the event of an accidental ignition. Thus, the program activities in sloped areas would not increase wildfire risks that would have the potential to lead to fire or post-fire slope instability. Due to the generally flat topography, and implementation of BMP HM-12 to prevent fire (including in steeply sloping areas), the program activities would not cause post-fire slope instability including downstream or downslope flooding or landslides. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact WIL-4.

3.14 Utilities and Service Systems

This section provides an overview of the utilities and service systems in the program area, including water supply, wastewater management services, solid waste management services, electricity, and natural gas; applicable regulations, policies, and standards; and a discussion of potential impacts on utilities and service systems from program implementation.

3.14.1 Environmental Setting

The environmental setting includes utilities and service systems throughout Santa Clara County as well as limited sections of eastern Merced County and San Benito County, in which a 2.5-mile segment of the Pacheco Conduit and 4.3-mile segment of the Santa Clara Conduit pipeline are located, respectively. Water supply, electricity, natural gas, and communication facilities are described for Santa Clara, Merced County, and San Benito County; however, because wastewater and solid waste that would be generated from program implementation would be routed to Santa Clara County facilities, the discussion for wastewater and solid waste is focused only on facilities in Santa Clara County.

Water Supply

The Santa Clara Valley Water District (Valley Water) is a public agency that serves approximately 2.0 million residents throughout Santa Clara County. As a countywide wholesale water and groundwater management agency, Valley Water relies on local retailers (municipalities and private companies) to deliver water to homes and businesses throughout the county. Valley Water's local retailers include the San Jose Water Company, California Water Service Company, Great Oaks Water Company, City of Milpitas Community Services, City of Mountain View Public Works, San José Municipal Water System, City of Santa Clara Water Department, Gilroy Community Service, Purissima Hills Water District, City of Morgan Hill, City of Palo Alto Utilities Department, City of Sunnyvale Public Works Department, and unincorporated areas (Valley Water 2023a). Valley Water operates and maintains 10 reservoirs and dams, 102 groundwater recharge basins, more than 140 linear miles of conveyance pipelines, three treatment plants, an advanced recycled water purification plant, and three pump stations. Water supplies include local surface water and groundwater, imported water, and recycled water (Valley Water 2023c). The County's water supply sources are: imported water via the Sacramento–San Joaquin Delta from the Sierra Nevada snowmelt (about 45%), local water (about 35%), recycled water (about 5%), and Hetch Hetchy water (about 15%), based on a ten-year average (2014-2023). Valley Water estimates that the total storage capacity of its reservoirs is approximately 170,000 acre-feet, which is equivalent to 55 billion gallons[1] (Valley Water 2023b), although seismic restrictions

[1] 1 acre-foot is equivalent to 325,851 gallons of water.

currently constrain Valley Water's ability to completely fill five reservoirs. On average, natural groundwater recharge provides approximately 50,000 acre-feet per year of supply.

Other agencies and organizations also contribute to water supply reliability in Santa Clara County. The San Francisco Public Utilities Commission (SFPUC) delivers Hetch Hetchy water to retailers in northern Santa Clara County. The U.S. Bureau of Reclamation (Reclamation) brings water from San Luis Reservoir as part of the San Felipe System that delivers water at the Coyote Pumping Plant in the town of Morgan Hill. The California Department of Water Resources supplies water via the South Bay Aqueduct that terminates at the Valley Water-owned and operated Penitencia Water Treatment Plant in San Jose. Stanford University and San Jose Water hold their own surface water rights (Valley Water 2019).

Valley Water-owned and/or -operated conveyance pipelines are found throughout Santa Clara County and small portions of San Benito County (extending approximately 4.3 miles) and Merced County (extending approximately 2.5 miles). A very small portion of infrastructure extends into Merced and San Benito counties, and Valley Water does not provide water service to these counties. Table 2-1 lists the pipelines in the program area.

To compensate for supply variability, Valley Water stores excess water in wet years in the groundwater basin, local reservoirs, San Luis Reservoir, or Semitropic Groundwater Bank. Valley Water draws on these reserve supplies during dry years to help meet water demands. These reserves are sufficient to meet demands during a critical dry year and the first several years of an extended drought. Valley Water also works with retailers to balance groundwater pumping and treated water use, based on groundwater basin conditions, to maximize the use of available supplies (Valley Water 2019).

Wastewater Management Services

The San José–Santa Clara Regional Wastewater Facility (SJ-SC RWF) serves 1.4 million residents and 17,000 businesses across eight cities and unincorporated areas in Santa Clara County. The SJ-SC RWF treats an average of 110 million gallons of wastewater per day, with a capacity of 167 million gallons per day. Four sanitation districts are contracted with the SJ-SC RWF for treatment, disposal, and recycle of wastewater: West Valley Sanitation District (WVSD), Cupertino Sanitary District (CuSD), Burbank Sanitary District (BSD), and County Sanitation District 2-3 (CSD 2-3) (City of San Jose 2023).

The WVSD owns and maintains a 616-mile-long gravity sewer wastewater collection system in a 28-square-mile service area, immediately southwest of San José. It serves 107,300 customers in Campbell, Monte Sereno, a portion of Saratoga, Los Gatos, and intervening unincorporated portions of Santa Clara County. In 2021–2022, the WVSD transported an average annual daily flow of approximately 9.67 million gallons of wastewater, or 3.5 billion gallons per year, to the SJ-SC RWF for treatment (WVSD 2019).

The CuSD covers approximately 15 square miles, serving more than 50,000 people with more than 23,000 residential and business units in Cupertino, portions of Saratoga, Sunnyvale, Los Altos, and unincorporated areas in Santa Clara County. CuSD system includes over 1 million

linear feet of sewer mains, 95 miles of sewer laterals, 17 pump stations, and 4,000 manholes and flushing inlets. The CuSD conveys nearly 5 million gallons of wastewater daily for treatment at the SJ-SC RWF (CuSD 2023).

The BSD is an independent agency, encompassing approximately 0.28 square miles of unincorporated Santa Clara County. Created in 1940, the BSD is a special district that was organized under the California Health and Safety Code and the Sanitary Act of 1923. The BSD operates and services approximately 8 miles of collection sewer lines and transports approximately 336,000 gallons of sewage per day to the SJ-SC RWF. Approximately 95 percent of the BSD's collection system was installed prior to 1955 and currently is undergoing a large rehabilitation program (BSD 2021).

The CSD 2-3 service area encompasses approximately 3.76 square miles, including unincorporated areas of East San Jose near the Alum Rock area (District 2) and other unincorporated areas including the County Fairgrounds and the area south of them (District 3). Wastewater that is collected within the CSD 2-3 boundaries is transported to the SJ-SC RWF for treatment and disposal (CSD 2-3 2019).

Solid Waste Management Services

Solid waste in Santa Clara County is collected and disposed primarily by contracted private waste management companies, including GreenWaste Recovery, Peninsula Sanitary Service, Recology South Bay, and GreenTeam of San Jose. Four active permitted Class III landfills are in Santa Clara County, as shown in Table 3.14-1. Table 3.14-1 summarizes the maximum permitted throughput, maximum permitted capacity, remaining capacity, and estimated closure date for each of these landfills. Based on the remaining capacities and estimated cease operation dates, Newby Island Sanitary Landfill, Kirby Canyon Recycling and Disposal Facility, Guadalupe Sanitary Landfill, and Zanker Material Processing Facility accept class III debris (such as construction/demolition waste) and have capacity to accept waste past 2040.

Table 3.14-1 Permitted Solid Waste Facilities in Santa Clara County

Facility	Category	Maximum Permitted Throughput (tons/day)	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards) as of (date)	Estimated Ceased Operation Date
Newby Island Sanitary Landfill (43-AN-0003)	Disposal	4,000	57,500,000	16,400,000 1/31/2020	1/1/2041
Kirby Canyon Recycling and Disposal Facility (43-AN-0008)	Disposal	2,600	36,400,000	16,191,600 7/31/2015	12/31/2059
Guadalupe Sanitary Landfill (43-AN-0015)	Disposal	4,000	57,500,000	16,400,00 1/31/2020	1/1/2041

Facility	Category	Maximum Permitted Throughput (tons/day)	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards) as of (date)	Estimated Ceased Operation Date
Zanker Material Processing Facility (43-AN-0001)	Disposal	4,000	57,500,000	16,400,000 1/31/2020	1/1/2041

Sources: CalRecycle 2023c; 2023b; 2023a; 2023d

Electricity and Natural Gas

PG&E and Northern California Power Agency (NCPA) provide electricity in Santa Clara, San Benito, and Merced counties. As of 2017, thirteen unincorporated Santa Clara County communities had started receiving 100 percent carbon-free electricity from SVCE, a Community Choice Aggregation agency (Silicon Valley Clean Energy 2023). San Benito County also receives electrical service from a tri-county Community Choice Aggregation agency called Monterey Bay Community Power. Merced County also receives electric services from the Merced Irrigation District and Turlock Irrigation District (Merced County 2013). PG&E is the natural gas provider for Santa Clara, San Benito, and Merced counties.

Electrical and natural gas lines often are found along or within the same ROWs as Valley Water pipelines. In urban areas, electrical distribution lines often are underneath roadways, while in rural areas, aboveground distribution lines are more common. Natural gas lines are almost always buried. In some areas, utility lines are directly above vaults (Valley Water 2007).

Communication System

Telecommunications are mainly privately owned enterprises with services offered by a variety of companies with varying service capacities across the program area. Existing communication services (including cable, telephone, and internet services) in Santa Clara, San Benito, and Merced counties primarily are provided by Sonic Telecom, Xfinity/Comcast, Verizon, SBC/AT&T, and Charter (San Benito County 2015; Merced County 2013; MTC & ABAG 2021). Similar to the electrical distribution lines, communication lines are commonly buried in urban areas and aboveground in rural areas.

3.14.2 Regulatory Setting

Federal Regulations, Policies, and Standards

Although multiple federal laws, statutes, and regulations generally would apply to the program, the federal government and its agencies have delegated the authority to implement and satisfy requirements relevant to utilities and service systems to the State of California and its agencies, as discussed next.

State Regulations, Policies, and Standards

California's Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Public Resources Code, Division 30), enacted through Assembly Bill 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000, and to divert at least 75 percent of generated waste (based on per capita disposal rates) by 2020.[2] A jurisdiction's diversion rate is the percentage of the total waste that a jurisdiction diverts from disposal through reduction and recycling programs. The law requires all California counties, in coordination with their respective cities, to develop and implement integrated waste management plans. As part of these plans, counties must ensure that a minimum of 15 years of disposal capacity is available to serve the county and its cities. Since 2007, the achievement of waste-diversion rates has been measured based on per-capita disposal rates, expressed in pounds per person per day of waste disposed in landfills. To achieve the target waste-diversion rates, the California Department of Resources Recycling and Recovery (CalRecycle) established a target disposal rate of 8.6 pounds per person per day in Santa Clara County in 2021 (CalRecycle 2023a).

Local Regulations, Policies, and Standards

Santa Clara County Integrated Waste Management Plan

The Santa Clara County Countywide Integrated Waste Management Plan (CIWMP) was completed and approved by the California Integrated Waste Management Board in 1996. Each of the jurisdictions (cities and towns) in the county has implemented the CIWMP. The jurisdictions and the County have 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, 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. 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

[2] PRC Division 30, Sections 40000–49620.

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.

As of 2000, the County and all jurisdictional cities successfully had diverted and continue to divert 50 percent or more of the waste stream from landfill disposal.

Santa Clara County Zero Waste 2020 Vision

Santa Clara County developed the "Zero Waste 2020 Vision" to encourage local governments to adopt policies and develop plans that motivate community members to eliminate waste. This vision statement and action plan were developed to provide Santa Clara County jurisdictions with a working document for use to guide decision-making policies and programs toward achieving zero waste by 2020.

Santa Clara County's vision was that by 2020, all discarded materials in the county were to be recovered for their highest and best use, and no materials were to be sent to landfills or incinerators. As stated in its vision statement, Santa Clara County has and continues to work to:

1. Educate and engage businesses, organizations, public agencies and residents.
2. Adopt and implement supporting policies and zero waste action plans.
3. Support legislation and adopt policies that require minimizing environmental impacts through improved product design.
4. Ensure that facilities and infrastructure are in place to properly manage all recovered materials.

Implementation of Zero Waste 2020 Vision actions to achieve the County's mission was and continues to be based on the following guiding principle regarding recycling and composting:

- Recycling and Composting: Manage Materials to Minimize Environmental Impacts Downstream
  - All organic materials shall be recovered and productively used.
  - Recovered materials shall be directed to their highest and best use.
  - Materials sent to landfill shall be minimized.

Using the County's guidance, both public and private entities throughout the county have chosen to develop and implement zero waste plans.

Santa Clara County General Plan

Adopted in 1994, the Santa Clara County General Plan, 1995–2010 guides utility and service systems planning efforts for the county, in both incorporated and unincorporated areas. The Resource Conservation and Health and Safety chapters of the General Plan specifically provides strategies, policies, and implementation actions for wastewater use, solid waste disposal, and underground water supplies (Santa Clara County 1994). Policies include preventing wastewater

contamination, monitoring and maintaining the adequacy of existing facilities, and monitoring groundwater quality.

General Plans of Incorporated Cities within Santa Clara County
Utility systems—including water systems, wastewater treatment facilities, stormwater drainage facilities, solid waste disposal sites, and electric, gas, and telecommunication systems—are most concentrated in the incorporated cities and towns in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to utilities and service systems:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The utilities guidelines in these general plans commonly address interagency partnerships and coordination with other surrounding public entities, including Valley Water and Santa Clara County, to establish, maintain, and operate public utilities. In addition, several cities—including Cupertino, San Jose, Los Altos, and others—have their own zero waste programs and/or diversion goals to reduce landfill waste.

San Benito County General Plan
Adopted in 2015, the San Benito County General Plan guides utility and service systems planning efforts for the county. The Public Facilities and Services Element of the General Plan specifically provides strategies, policies, and implementation actions for wastewater use, solid waste disposal, and underground drainage systems (San Benito County 2015). The 4.3 miles of the Santa Clara Conduit within San Benito County are in a semi-developed area and review of applicable San Benito County General Plan policies and goals would apply to any program activity planned in the County.

3.14.3 Impact Analysis Methodology

The impacts presented in this section were evaluated qualitatively, based on the potential for program activities to disrupt existing utilities and service systems, or for existing water supplies and solid waste capacity to be insufficient to support the program. As discussed in Chapter 2, Project Description, program activities would involve implementing various common tasks. Program tasks that have the potential to impact utilities and service systems include:

- Setup, staging, and access
- Excavation, construction, and other ground disturbance

- Repair of pipeline system infrastructure
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Vegetation management
- Bank stabilization and erosion control

These actions are evaluated collectively in the impact discussion below.

Significance Criteria

The impacts of the program on utilities and service systems would be considered significant if they exceed the following standards of significance:

- **Impact UT-1:** 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 or relocation of which could cause significant environmental effects.
- **Impact UT-2:** Have insufficient water supplies available to serve the program and reasonably foreseeable future development during normal, dry, and multiple dry years.
- **Impact UT-3:** Result in a determination by the wastewater treatment provider that serves or may serve the program that it has inadequate capacity to serve the program's projected demand in addition to the provider's existing commitments.
- **Impact UT-4:** Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- **Impact UT-5:** Fail to comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's BMP Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's BMP Handbook does not contain any utility- or service system-related BMPs applicable to the PMP.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the PMP to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to utilities and service systems are shown in Table 3.14-2.

Table 3.14-2. Utilities and Service Systems-Related AMMs

AMM No.	AMM Requirements
AMM TRA-1	**Traffic Control Plan.** For program activities requiring encroachment into a city, county, or State-owned road, Valley Water or its contractor shall prepare a Traffic Control Plan (TCP). The TCP shall be prepared by a California-licensed Traffic Engineer or licensed civil professional engineer and conform to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and the Manual on Uniform Traffic Control Devices. At a minimum, the TCP shall include the following elements: • Circulation and detour plans to minimize impacts on local street circulation (haul routes will minimize truck traffic on local roadways to the extent possible). • A description of emergency response vehicle access (an alternate route shall be identified if the road or area is completely blocked, preventing access by an emergency responder). • Procedures to schedule construction activities in a manner that will minimize overlapping construction phases that require truck hauling to the extent feasible. • Identification of staging areas that will be designated for storage of all equipment and materials in a manner that minimizes obstruction to traffic. • Identification of designated construction worker parking locations. • Procedures for use of temporary signs, flashing lights, barricades, flaggers, and other traffic safety personnel or devices where required to control or direct the flow of traffic. • Temporary traffic marking installation requirements where required to direct the flow of traffic (traffic markings will be maintained for the duration of road/lane closure and removed when completed). • Procedures to keep sidewalks and bicycle lanes open for pedestrians and cyclists, respectively, to the extent safe, or identification of detour routes and signing if sidewalks or bicycle lanes will be closed. • Procedures to maintain driveway access to residences or businesses unless other arrangements are made. A minimum of 12-foot-wide travel lanes will be maintained unless otherwise approved by Valley Water and/or an agency with encroachment jurisdiction. Valley Water or its contractors will submit the TCP to the agency with encroachment jurisdiction in advance of program activities, to provide the agency with the opportunity to review the TCP and provide additional or alternative recommendations as appropriate. The contractor must submit documentation to Valley Water that the plan has been approved by the appropriate jurisdictional agency prior to the commencement of construction.
AMM TRA-2	**Equipment Routing near Roads and Pedestrian Pathways.** Pipes, hoses, and other equipment will be routed around roadways and pedestrian pathways (e.g., sidewalks, trails) to the extent feasible. When rerouting is not possible, pipes and hoses will be covered, and warning signage will be posted several feet beyond the location where the road or pathway is crossed by pipes or hoses, to notify the public regarding the hazard.
AMM HYD-1	**Stormwater Control and Pollution Prevention**. To control stormwater and prevent stormwater pollution, the applicable measures from the following list will be implemented: 1. Where practicable, maintain a vegetated buffer strip between staging/excavation areas and receiving waters in accordance with recommendations laid out in the California Stormwater Quality Association handbook: 50 feet plus four times the percent slope of the land measured between the road and top of bank. [Source: CASQA 2019] 2. Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be

AMM No.	AMM Requirements
	implemented such that the site is stabilized and water quality protected prior to significant rainfall. This AMM does not apply to the channel bed and areas below the Ordinary High Water Mark in creeks. 3. The preference for erosion control fabrics will be to consist of natural fibers; however, upland 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. 4. Erosion control measures will be installed according to manufacturer's specifications. 5. To prevent stormwater pollution, the appropriate measures from, but not limited to, the following list will be implemented: • silt fences • straw bale barriers • brush or rock filters • storm drain inlet protection • sediment traps or sediment basins • erosion control blankets and/or mats • soil stabilization (i.e., tackified straw with seed, etc.) • straw mulch 6. All temporary construction-related erosion control methods will be removed on completion of construction (e.g., silt fences).
AMM HYD-2	**Obtain Storm Drain Capacity Information.** Valley Water will obtain storm drain capacity information from the responsible municipality before a release to a storm drain. Release rates to the storm drain will be maintained below its conveyance capacity. Valley Water will verify where the storm drain releases to surface water, to determine water quality monitoring locations. Recycled water will be released only to approved facilities per the class of wastewater being released.
AMM UT-1	**Utility Coordination.** Valley Water will be responsible for coordination of activities involving utilities within a shared ROW and protection of any utility during construction. Valley Water will notify any utility within a shared ROW before the start of construction activity. Where an existing utility is known to exist or anticipated to be encountered during construction, Valley Water will be responsible for notifying and/or supplying appropriate drawings to the affected utility's owner in advance of program work in which the utility will be involved. To the extent feasible, Valley Water will avoid interruptions to any utility service (gas, water, electricity, telephone, etc.). If a utility service cannot be avoided, Valley Water will coordinate with the utility provider for facility relocation or a temporary bypass solution.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to utilities and service systems.

3.14.4 Impact Analysis

Impact UT-1: 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 or relocation of which could cause significant environmental effects (less than significant)

Program implementation would not create any permanent employment or otherwise result in the need for new utility demand or indirectly require relocation or construction of new utilities. Therefore, the discussion below focuses on potential direct impacts to existing utility systems that may occur as a result of program implementation.

Water Facilities
Water facilities in the program area include all of Valley Water's raw, treated, and recycled water conveyance pipeline systems and related facilities and appurtenances in Santa Clara County and limited portions of San Benito and Merced counties (Figure 2-1). As described in Section 2.4, the activities described in the updated PMP manual would be necessary to meet Valley Water's obligations to deliver safe and reliable service as a water purveyor. As described in Section 2.4.3, the program would encompass all routine inspection and maintenance work, including repair, replacement, or installation of new appurtenances and associated components to these systems. Age, wear, corrosion, leaks, and integrity loss because of seismic activity and other natural geologic processes would all contribute to the degradation of the systems over time. Preventative and corrective maintenance would be performed to verify adequate system functionality and safe, reliable water delivery. The program would include tasks to maintain and repair existing water facilities but would not include tasks that would increase the system capacity or require any expansion or new water facilities. Instead, program activities would meet the pipeline conveyance system's existing operational needs. Therefore, the impact would be **less than significant**.

Wastewater Treatment and Stormwater Drainage Facilities
Wastewater would be generated during program activities from worker sanitary facilities. Temporary restrooms for workers are likely to be available during maintenance activities. The sanitation contractor would provide portable restrooms and dispose the waste at a sewage treatment plant, in compliance with standards established by the Central Coast RWQCB and the San Francisco Bay RWQCB and would not exceed or violate wastewater treatment requirements. The amount of wastewater generated by the small number of workers on site at one time would not exceed existing wastewater treatment capacity.

During program activities such as excavation, construction, and other ground disturbance, increased erosion and sediment runoff could occur during storm events. The impact could be potentially significant if runoff increased to a level exceeding the capacities of nearby storm drains. To reduce the potential for erosion and increased runoff, Valley Water would implement AMM HYD-1, which would require installation and maintenance of erosion and sediment control features (e.g., French drains, Visqueen spillways, straw bales, silt fences) across the ROW to minimize potential increases in stormwater runoff from construction areas when rain is

forecasted during excavation. Therefore, program implementation would not necessitate the expansion of any stormwater drainage systems or facilities.

During dewatering, water may be released into storm drains, urban drainage channels, or sanitary sewer systems for appropriate disposal and treatment. The impact on these systems would be potentially significant if releases were to exceed system capacities. Valley Water would implement AMM HYD-2 to obtain storm drain capacity information from the responsible municipality before a release to a storm drain, so that release rates to the storm drain would be maintained below its conveyance capacity.

With implementation of AMM HYD-1 and AMM HYD-2, program implementation would not substantially increase stormwater releases to existing stormwater drainage systems, and therefore would not require or result in the relocation or construction of new or expanded off-site stormwater management facilities. The impact would be **less than significant**.

Electric Power, Natural Gas, and Telecommunication System Facilities
Various Valley Water conveyance pipelines and infrastructure throughout the program area are near or overlap existing electric power, natural gas, and telecommunication systems. Program activities could require relocation of a conflicting utility service, which could result in a significant impact on the utility. Implementation of AMM UT-1 would require Valley Water to identify adjacent utilities before performing any activity that would conflict with utilities in a shared ROW. Valley Water would notify utilities within a shared ROW of any planned construction activity and would coordinate temporary services or relocation. Any required shutdowns would be coordinated as appropriate. Coordination with utilities before construction would minimize any potential impacts. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact UT-1.

Impact UT-2: Have insufficient water supplies available to serve its ongoing needs and reasonably foreseeable future development during normal, dry, and multiple dry years (less than significant)

Program activities could require water for dust control, firefighting, hydrostatic testing, and other short-term or infrequent applications. These water demands would be met with trucked-in water and are not anticipated to be substantial or require substantial quantities of surface water. Program activities also would require relatively small amounts of potable water for some site needs, for drinking water, hand-washing, and other on-site sanitary needs. The increase in water demand would be periodic, on an as-needed basis, and dispersed throughout the program area. In general, water supplies are planned such that short-term spikes in potable use can be accommodated, with no need for new or expanded water supplies or water-treatment facilities. Valley Water has estimated that the total storage capacity of their reservoirs is

approximately 170,000 acre-feet per year, which is equivalent to 54 billion gallons per year. Although the amount of water needed for program activities is not possible to quantify, it is expected to be minimal and would constitute a negligible amount of Valley Water's total supply. Program activities would not require more potable water supply than would be available during normal, dry, or multiple dry years because of the limited amount of water required and short-term nature of the demand. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact UT-2.

Impact UT-3: Result in a determination by the wastewater treatment provider which serves or may serve the program that it has inadequate capacity to serve the program's projected demand in addition to the provider's existing commitments (less than significant)

As discussed under Impact UT-1, wastewater would be generated by the sanitary needs of construction workers. As described in Chapter 2, Project Description, most program activities generally would require less than 1 week to complete, and the maximum construction workforce would be approximately 10 workers per day at a program work site, generating a limited amount of wastewater. The sanitation contractor would be required to dispose of waste at a treatment facility, use porta-potties, or similar in compliance with all applicable regulations and facility procedures.

Recycled water may be released into sanitary systems to be processed by wastewater treatment facilities. Recycled water must meet certain quality requirements before release, and additional requirements may be stipulated by the wastewater treatment facility to comply with National Pollutant Discharge Elimination System permits. Valley Water would coordinate with and is required to obtain approval from the authority that owns the wastewater treatment facility in advance of releases, so that the inflow would be processed in compliance with the authority's requirements. The requirement for approval from the wastewater authority before a recycled water release to a wastewater system would ensure adequate capacity. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact UT-3.

Impact UT-4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise would impair the attainment of solid waste reduction goals (less than significant)

Program activities, such as demolition or repair of existing facilities, vegetation management, and earthwork (i.e., excavation, grading), would produce solid waste. Newby Island Sanitary Landfill, Kirby Canyon Recycling and Disposal Facility, Guadalupe Sanitary Landfill, and Zanker Material Processing Facility accept class III debris (such as construction/demolition waste) and had a combined remaining capacity of approximately 64 million cubic yards as of 2015 to 2020. A typical program activity would produce a maximum of approximately 1.8 cubic yards of waste, which would be a negligible amount of the available capacity of the area landfills. Much of the program's demolition debris (e.g., concrete rigid plastics, metals, rock, asphalt) that would be transported to area landfills would be diverted for recycling. Debris from vegetation management would be composed primarily of compostable waste and has been included in the 1.8-cubic-yard estimate of a typical program activity's maximum waste, and thus would not be a considerable source of waste that would be sent to a landfill. Furthermore, maintenance of program facilities has been ongoing under the existing PMP; therefore, a new waste stream would not be created at any local landfills. Program implementation would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact UT-4.

Impact UT-5: Comply with federal, State, and local management and reduction statutes and regulations related to solid waste (less than significant)

As discussed under Impact UT-4, all solid waste generated by program activities would be transported and disposed of at permitted landfills in accordance with all applicable federal, State, and local regulations, consistent with procedures implemented for the existing PMP. All landfills identified for disposal and recycling of construction and demolition debris are permitted to accept the types of solid waste that would be generated by program activities and are required to meet federal, State, and local solid waste regulations. The impact would be less than significant.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact UT-5.

3.15 Land Use and Planning

This section provides an overview of land use and planning in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts on land use and planning from program implementation.

3.15.1 Environmental Setting

The environmental setting for this section includes land uses throughout Santa Clara County, a limited section of eastern Merced County in which a 2.5-mile segment of the Pacheco Conduit is located, and the approximately 4.3-mile segment of the Santa Clara Conduit in San Benito County. Land uses in the program area include a full range of development types and intensities (e.g., residential, commercial, industrial, public, open space) that are subject to the applicable land use jurisdiction of Santa Clara County, San Benito County, Merced County or one of the incorporated cities in the program area.

Much of Valley Water's pipeline infrastructure serves the water demands of the populated areas in the northern portion of the program area. Thus, many of the PMP pipelines and ancillary facilities are within urban environments and are primarily adjacent to residential, commercial, or industrial land uses, including high-traffic areas within the incorporated cities in Santa Clara County. The majority of pipelines in these developed urban environments are in utility easements within roadways. Several pipelines, including the Calero Pipeline, Cross Valley Pipeline and Extension, Santa Clara Conduit, Uvas-Llagas Transfer Pipeline, and Pacheco Conduit, are primarily within the valleys and hills in the southern portion of the program area, where most of the land is undeveloped or used for agricultural or recreational activities.

The general plans for Santa Clara and San Benito counties are discussed further in Section 3.15.2 Regulatory Setting and designate land uses for the program areas within their respective jurisdictions. Table 3.15-1 summarizes the overlying counties and incorporated cities' jurisdictions for each pipeline and provides information on the general land use designations derived from the counties and incorporated cities' general plans. In addition, Figure 3.15-1 shows Santa Clara, San Benito, and Merced counties designations.

Land Use Designations

The primary land use designations in the program area in unincorporated Santa Clara County are Agricultural Ranchlands, Agriculture-Large Scale, Agriculture-Medium Scale, and Rural Residential. The purpose of the Agricultural Ranchlands district is to preserve ranching, the natural resources, and the rural character of the areas to which it applies. Agriculture-Large Scale and Medium Scale designations are for lands that are more than 10,000 square feet of covered space, devoted to processing activities for large scale and lands that are between 2,400 and 10,000 square feet of covered space devoted to processing activities for medium scale. The

Rural Residential designation permits rural residential development in certain limited, unincorporated areas of the county as designated in the general plan.

Table 3.15-1. Program Pipeline Jurisdictions and Land Uses

Pipeline	Water Type	Length (miles)	Jurisdiction(s)	Land Uses[a, b]
Alamitos Pipeline	Raw	0.2	San Jose	Urban uses are varied
Almaden Valley Pipeline	Raw	12.3	Los Gatos, San Jose	Rural residential
Anderson Force Main	Raw	0.8	Morgan Hill, Unincorporated Santa Clara County	Agricultural-medium scale
Bayview Golf Course Turnout	Raw	0.1	Milpitas	Urban uses are varied
Calero Pipeline	Raw	2.6	San Jose	Open space, regional park
Campbell Distributary	Treated	2.0	Saratoga, San Jose, Campbell	Urban uses are varied
Central Pipeline	Raw	13.1	San Jose, Campbell	Urban uses are varied
Church Avenue Percolation Pipeline	Raw	0.1	Unincorporated Santa Clara County	Public open lands, rural residential
Coyote Discharge Line	Raw	0.5	Morgan Hill	Agriculture-medium scale, Agriculture-large scale
Coyote–Madrone Half Road Pipeline	Raw	1.2	Morgan Hill	Agriculture medium scale
Cross Valley Pipeline	Raw	7.9	San Jose, Unincorporated Santa Clara County, Morgan Hill	Hillside, ranchland, agriculture-medium scale, agriculture-large scale
Cross Valley Pipeline Extension	Raw	1.3	San Jose, Unincorporated Santa Clara County, Morgan Hill	Hillside, ranchland, agriculture-medium scale, agriculture-large scale
East Evergreen Pipeline	Treated	6.4	San Jose	Urban uses are varied
Ed Levin County Park Turnout	Raw	0.01	Unincorporated Santa Clara County	Hillsides
Guadalupe Percolation Pipeline	Raw	0.8	San Jose	Urban uses are varied
Guadalupe Water System (Kooser Percolation Pipeline)	Raw	0.3	San Jose	Urban uses are varied

Pipeline	Water Type	Length (miles)	Jurisdiction(s)	Land Uses[a, b]
Hetch–Hetchy Intertie	Treated	0.2	Milpitas	Urban uses are varied
Helmsley/Capitol Percolation Pipeline	Raw	0.8	San Jose	Open space, parkland, residential
Los Capitancillos Percolation Pipeline	Raw	0.02	San Jose	Open space
Main Avenue Pipeline	Raw	1.0	Unincorporated Santa Clara County	Agriculture-medium scale, regional park
Milpitas Pipeline	Treated	4.6	San Jose, Milpitas	Urban uses are varied
Mountain View Distributary	Treated	1.1	Cupertino, Los Altos, Mountain View	Urban uses are varied
Overfelt Garden Percolation System	Raw	0.5	San Jose	Public/quasi-public, open space, parkland
Pacheco Conduit	Raw	7.9	Unincorporated Santa Clara County	Ranchland, roadside services[c], wildlife area, state park
Pacheco Tunnel	Raw	5.4	Unincorporated Santa Clara County and State of California	Regional park, ranchlands, recreation
Page Distribution System	Raw	0.5	San Jose	Rural residential
Parallel East Pipeline	Treated	4.1	San Jose	Urban uses are varied
Penitencia Delivery Main	Treated	0.5	San Jose	Urban uses are varied
Penitencia Force Main	Raw	0.3	San Jose	Urban uses are varied
Rinconada Force Main	Raw	1.0	Los Gatos	Urban uses are varied
San Pedro Percolation Bypass Pipeline	Raw	0.5	Unincorporated Santa Clara County	Agriculture-medium scale
San Pedro Percolation Pipeline	Raw	0.05	Unincorporated Santa Clara County	Agriculture-medium scale
Santa Clara Conduit	Raw	22.2	Morgan Hill, Unincorporated Santa Clara County, San Benito County	Agriculture-medium scale, agriculture-large scale, regional park, rural residential, ranchland, roadside services
Santa Clara Distributary	Treated	4.1	Saratoga, San Jose, Cupertino	Urban uses are varied
Santa Clara Tunnel	Raw	1.0	Gilroy	Ranchlands

Pipeline	Water Type	Length (miles)	Jurisdiction(s)	Land Uses[a, b]
Santa Teresa Force Main	Raw	0.3	San Jose	Rural residential
SBA Flowmeter/Dumbarton Quarry Turnout	Raw	0.01	Unincorporated Santa Clara County	Hillsides
Snell Pipeline	Treated	9.7	San Jose	Urban uses are varied
South County Recycled Water Pipeline	Recycled	10.8	Gilroy	Urban uses are varied
Stevens Creek Pipeline	Raw	9.8	Los Gatos, Saratoga, Cupertino	Urban uses are varied
Sunnyvale Distributary	Treated	0.5	Sunnyvale	Urban uses are varied
Uvas–Llagas Transfer Pipeline	Raw	3.3	Unincorporated Santa Clara County	Open space
West Pipeline	Treated	9.1	Morgan Hill, Cupertino, Loyola, San Jose Los Altos, Freemont, Saratoga, Westmont	Urban uses are varied
Wolfe Road Pipeline	Recycled	2.6	Sunnyvale,	Urban uses are varied

Notes:

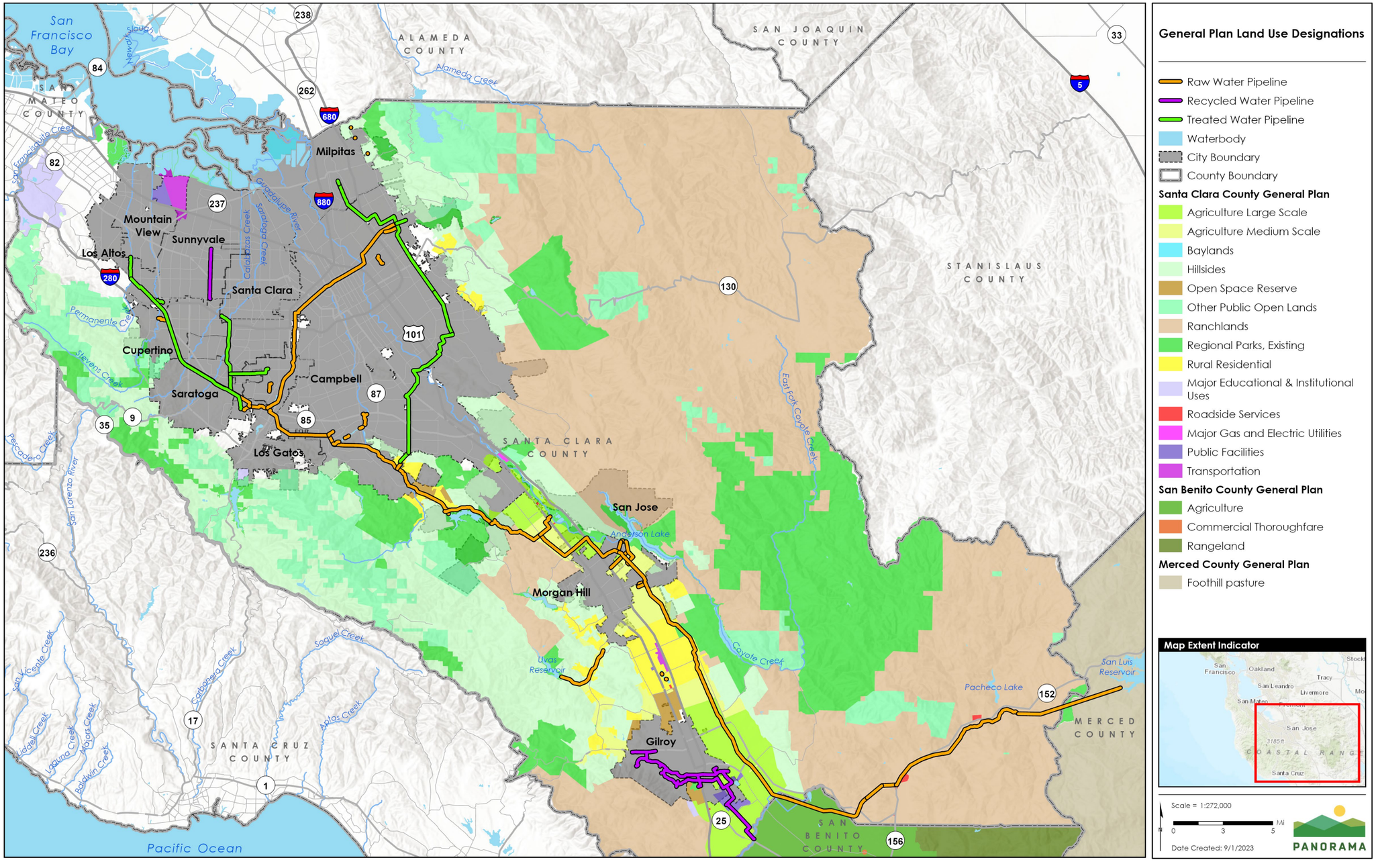
[a] Land use designations are derived from the general plans of the counties and cities that the program area traverses.

[b] Local jurisdictions in the program area maintain their own set of land uses. "Urban uses are varied" indicates that land uses in the developed incorporated portions of the program area typically include residential, commercial, and industrial land uses.

[c] The Santa Clara County General Plan defines Roadside Services as a land use designation for an area that contains "a limited number of private facilities and businesses that shall serve the motoring public in dispersed locations."

Sources: City of Gilroy 2020; City of Campbell 2001a; City of Cupertino 2014a; City of Los Altos 2002; City of Milpitas 2021a; City of Morgan Hill 2016; City of Mountain View 2012a; City of San Jose 2011; City of Santa Clara 2010; San Benito County 2015

Figure 3.15-1. County Land Use Designations in the Program Area



General Plan Land Use Designations

- Raw Water Pipeline
- Recycled Water Pipeline
- Treated Water Pipeline
- Waterbody
- City Boundary
- County Boundary

Santa Clara County General Plan

- Agriculture Large Scale
- Agriculture Medium Scale
- Baylands
- Hillsides
- Open Space Reserve
- Other Public Open Lands
- Ranchlands
- Regional Parks, Existing
- Rural Residential
- Major Educational & Institutional Uses
- Roadside Services
- Major Gas and Electric Utilities
- Public Facilities
- Transportation

San Benito County General Plan

- Agriculture
- Commercial Thoroughfare
- Rangeland

Merced County General Plan

- Foothill pasture

Map Extent Indicator

Scale = 1:272,000

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Date Created: 9/1/2023

PANORAMA

3.15.2 Regulatory Setting

Federal Regulations, Policies, and Standards

No federal regulations, policies, or standards addressing land use or planning are applicable to the PMP.

State Regulations, Policies, and Standards

California Government Code

Title 5, Division 2, Part 1, Chapter 1, Article 5 of the California Government Code (CGC) establishes the relationship between local agencies (such as Valley Water) and jurisdictions with land use authority (e.g., cities or counties). Under Section 53091 of the CGC, building and zoning ordinances of a county or city are not applicable to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water[1].

California Public Resource Code–State Parks and Monuments

The portion of the program area within Pacheco State Park would be subject to Division 5, Chapter 1 of the California Public Resources Code's (PRC) direction for management of lands that are managed by the California Department of Parks and Recreation (California State Parks). Section 5001 of the PRC states that no new facility may be developed in any unit of the State Park system unless it is compatible with the classification of the unit.

Local Regulations, Policies, and Standards

Governance Policies of the Board

The Valley Water Board of Directors has adopted several policies (Ends Policies) to provide guidance and goals to direct Valley Water activities. These Ends Policies include goals related to Valley Water's water supply services (Valley Water 2005). PMP-related goals and objectives include the following:

WS Goal 2.3 Protect and maintain existing water infrastructure.

[1] Valley Water may be exempt from compliance with tree ordinances of Santa Clara County and various localities within the program area under either Government Code sections 53091(d) or (e) (which state that County or City building and zoning ordinances do not apply to the construction of facilities for water storage or transmission), or for nonbuilding and zoning ordinances, under *Hall v. Taft* (1956) 47 Cal. 2d 177, 189 (which holds that 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. Nevertheless, recognizing the importance of protected trees, Valley Water is voluntarily proposing to plant replacement trees consistent with local ordinance requirements in the unlikely event that tree removal is necessary to support maintenance activities.

WS Objectives

2.3.1 Plan for infrastructure maintenance and replacement to reduce risk of failure.

2.3.2 Prioritize funding for maintenance and replacement of existing water infrastructure over investments in new infrastructure.

2.3.3 Prepare for and respond effectively to water utility emergencies.

WS Goal 2.6 Promote access to equitable and affordable water supplies.

WS Objectives

2.6.1 Promote equal access to clean, safe, and affordable water supply across all communities served.

Santa Clara County

Santa Clara County General Plan

The Santa Clara County General Plan is a comprehensive, long-range plan for physical development of the county that identifies land use goals and policies. General Plan land use designations help identify the type of development that is allowed within specific areas, and they display the spatial relationships among land uses and the general pattern of future development. Most of the program area in the unincorporated part of Santa Clara County is designated for ranchlands, agricultural, and rural residential uses under the Santa Clara County General Plan, as shown in Figure 3.15-1 (Santa Clara County 1994).

Santa Clara County General Plan land use policies relevant to the program area include the following:

Ranchlands Policies

R-LU 36: The general intent of the Ranchlands designation is to maintain the existing conditions of very low intensity uses, rural lifestyle, and limited public access. Development policies shall protect and enhance the continued use of the land for ranching.

R-LU 39: The primary use shall be ranching. Other allowable uses shall be: a. agriculture; b. low intensity recreational uses; c. mineral extraction; d. land in its natural state; e. hunting; f. wildlife refuges; g. very low density residential development; and h. very low intensity commercial, industrial, or institutional uses, provided that they primarily support ranching activities or the enhancement, protection, study or appreciation of the natural resources of the area.

Agriculture Policies

R-LU 11: Allowable land uses shall be limited to: a. agriculture and ancillary uses; b. uses necessary to directly support local agriculture; and c. other uses compatible with agriculture which clearly enhance the long-term viability of local agriculture and agricultural lands.

Rural Residential Areas Policies

R-LU 57: Residential, agricultural and open space uses are the primary uses. Commercial, industrial and institutional uses may be established only where they are sized to be local-serving in nature.

Santa Clara County Zoning Ordinance

Most of the program area in Santa Clara County is zoned as Agricultural Ranchlands (AR), Exclusive Agriculture (A), or Rural Residential (RR) (Santa Clara County 2012). These zones are defined as follows:

AR Zone District The purpose of the AR zone district is to preserve ranching activities, natural resources, and the rural character of the area. Permitted uses include ranching or agriculture, low-intensity recreation, mineral extraction, and land in its natural state. The AR district is modified by the Scenic Roads combining district along State Route (SR) 152. The purpose of the Scenic Roads combining district is to protect the visual character of scenic roads in Santa Clara County through special development and sign regulations.

A Zone District The purpose of the A zone district is to preserve and encourage long-term viability of agriculture and agricultural lands. The County intends to reserve those lands most suitable for agricultural production for agricultural and appropriate related uses. This A zone district will allow stability for ongoing agricultural operations and provide new uses necessary to support a viable local agriculture industry. The A zone district is also intended to retain open space uses, which may be suitable for future urbanization.

RR Zone District The purpose of the RR zone district is to allow rural residential development in certain limited unincorporated areas of Santa Clara County. Residential, agricultural, and open space uses are the primary uses intended within the RR district. Commercial, industrial, and institutional uses may be established only where they are sized to be local serving in nature within the RR zone district.

A limited portion of the Pacheco Conduit passes through an area zoned for Roadside Services (RS) along SR 152. The RS zone is intended to allow specific and necessary highway uses and services within clusters at appropriate locations that are necessary to serve the motoring public.

General Plans of Incorporated Cities within Santa Clara County

The program area overlies a number of local jurisdictions within Santa Clara County. The following municipal general plans may contain goals and policies relevant to land use and planning for the PMP:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021b)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012b)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

These general plans commonly contain goals and policies that are focused on maintaining existing land use zoning and promoting consistent development patterns.

San Benito County

San Benito County General Plan

The program area in San Benito County is designated as Agriculture by the San Benito County General Plan. The purpose of the Agriculture designation is to maintain the productivity of agricultural land, especially prime farmland, in the county. This designation is applied to agriculturally productive lands of various types, including crop lands, vineyards, and grazing lands. This designation allows agricultural support uses, such as processing, wineries, and other necessary public utility and safety facilities. These areas typically have transportation access but little to no public infrastructure (San Benito County 2015).

San Benito County Zoning Ordinance

The portion of the program area in San Benito County is zoned as Agriculture Productive, which is intended to provide for areas within the county to be used for agricultural production of any type, as set forth in the general plan (San Benito County 2015).

Merced County

Merced County General Plan

The limited portion of the program area within unincorporated Merced County is designated as Foothill Pasture, which is one of two rural land use areas within the county. This designation provides for non-cultivated agricultural practices which typically require larger areas of land due to poor soil quality, limited water availability, and steeper slopes (Merced County 2013).

Merced County Zoning Ordinance
The portion of portion of the program area within unincorporated Merced County is zoned as Exclusive Agriculture. The purpose of the Exclusive Agricultural Zone is to facilitate farming and ranching operations and a variety of open space functions that are typically less dependent on soil quality and are often connected more with foothill and wetlands locations; grazing and pasture land; and wildlife habitat and recreational areas (Merced County 2019).

3.15.3 Impact Assessment Methodology

Land use impacts were assessed based on the program's consistency with local and regional land use policies. Existing site conditions before program implementation are compared to site conditions during and after the program. Analyses related to agricultural resources are discussed in detail in Section 3.18, Agriculture and Forestry Resources.

Significance Criteria

The impacts of the program on land use and planning would be considered significant if they exceed the following standards of significance:

- **Impact LU-1:** Physically divide an established community.
- **Impact LU-2:** Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's Best Management Practices Handbook does not contain any land use-related BMPs applicable to the PMP.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the PMP to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to land use are shown in Table 3.15-2.

Table 3.15-2. Land Use and Planning-Related AMMs

AMM No.	AMM Requirements
AMM REC-3	**Repair Any PMP-Related Damage to Trails or Adjacent Park Facilities.** On completion of work, Valley Water shall repair any damage to trails or adjacent park facilities caused by the maintenance work. The repair shall return the facility to a level comparable to that existing before the work began. All work materials shall be removed from the site no later than 24 hours after the work is completed.

AMM No.	AMM Requirements
AMM REC-4	**Direct Releases to Avoid Crossing Trails and Slopes within Recreational Areas.** All releases shall be directed to avoid crossing trails and avoid slopes within recreational areas wherever possible. If avoidance is not possible, energy dissipation and erosion control measures shall be implemented consistent with Hydrology BMPs to avoid significant effects. Restoration of the trail or slope shall be completed upon completion of construction. Restoration shall be to the satisfaction of the authority responsible for the trail or park.
AMM TRA-2	**Equipment Routing near Roads and Pedestrian Pathways.** Pipes, hoses, and other equipment will be routed around roadways and pedestrian pathways (e.g., sidewalks, trails) to the extent feasible. When rerouting is not possible, pipes and hoses will be covered, and warning signage will be posted several feet beyond the location where the road or pathway is crossed by pipes or hoses, to notify the public regarding the hazard.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to land use and planning.

3.15.4 Impact Analysis

Impact LU-1: Physically divide an established community (less than significant)

As discussed in Chapter 2, Project Description, the program would be limited to maintenance, inspection, and rehabilitation activities on existing Valley Water facilities in the program area. The program would not expand existing infrastructure or facilities or add new pipelines to Valley Water's system. Therefore, the program would not develop new permanent facilities that would have the potential to divide an established community.

Where program pipelines cross or run along roadways or recreational facilities, program construction activities may cause temporary disruptions to pedestrian, bicycle, and/or vehicular traffic along affected roadways or recreational trails connecting existing communities. As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. The program tasks that would have the potential to impact roadway and trail connectivity would include:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Excavation, construction, and other ground disturbance
- Repair of pipeline system infrastructure

In addition to facility and maintenance activities, the program would include land entitlement work, as described in Chapter 2, Project Description. Land entitlement work, which would include acquisition of additional land, ROWs, and/or easements, is anticipated to be required

occasionally and would be limited to only circumstances where additional land is needed to facilitate pipeline systems maintenance. Therefore, land entitlement work would occur only where Valley Water operates and maintains existing pipeline infrastructure and would not create a physical barrier within an existing community. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact LU-1.

Impact LU-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect (less than significant)

As presented in Section 3.15.2, Regulatory Setting, several local land use plans and policies govern the program area. Program pipeline alignments traverse a wide variety of designated land uses and zoning. Although many of these land use designations and zoning districts do not explicitly call for public utility uses, maintenance of existing infrastructure would be allowable uses within Valley Water's ROWs and easements with access agreements. As discussed under Impact LU-1, the program would include land entitlement work, which would allow Valley Water to acquire land, ROWs, and easements to accommodate program activities. This land entitlement work would not conflict with land use plans, policies, or regulations because it would be limited to areas where Valley Water already operates and maintains pipeline infrastructure, and it would not result in any changes to existing land uses. Furthermore, program implementation would support Valley Water's Ends Policies, by maintaining infrastructure to reduce risk of failure and continuing to provide reliable access to water across the communities within its service area. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact LU-2.

3.16 Recreation

This section provides an overview of the recreational resources in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts on recreational resources from program implementation.

3.16.1 Environmental Setting

The environmental setting includes recreational resources throughout Santa Clara County as well as a limited section of eastern Merced County, in which a 2.5-mile segment of the Pacheco Conduit is located. The approximately 2-mile segment of the Santa Clara Conduit pipeline in San Benito County is not within or near any recreational resources, and therefore is not discussed further.

The majority of recreational resources in Santa Clara County are regional parks that are operated by Santa Clara County Parks and Recreation Department (Santa Clara County Parks). Santa Clara County Parks owns and manages 28 regional parks, covering more than 52,000 acres (Santa Clara County Parks 2023). These regional parks provide a variety of public recreational opportunities, including hiking, biking, and equestrian trails; picnic, playground, and sports facilities; and boating and fishing resources. Within Santa Clara County, the California Department of Parks and Recreation; the cities of Morgan Hill, San Jose, Los Gatos, Saratoga, Cupertino, Campbell, Santa Clara, and Gilroy; Rancho Rinconada Recreation and Park District; Santa Clara Valley Open Space Authority; and Peninsula Open Space Trust also own and operate public recreational facilities crossed by or adjacent to pipeline systems covered by the PMP. Several private recreational facilities also are within the program area and in close proximity to various pipelines. A list of the recreational resources crossed by or adjacent to pipeline systems covered by the PMP are summarized in Table 3.16-1. Several of the larger regional Santa Clara County and state parks and open spaces that are in the program area are shown in Figure 2-1.

The program area within Merced County is limited to the western portion of that county, which includes Pacheco State Park. Although the total park area covers 6,890 acres, only the western 2,600 acres are open for public use at this time. Several trails within Pacheco State Park are crossed by or are adjacent to the Pacheco Conduit, including the Whiskey Flat, Spikes Peak, Tunnel Monument, Pig Pond, and Dinosaur Lake trails (California State Parks 2023).

Table 3.16-1 Recreational Resources Crossed by or Adjacent to PMP Pipeline Systems

Operating Agency	Recreational Facility	Location	Primary Recreational Uses
Bay Area Ridge Council	Bay Area Ridge Trail	Santa Clara County	Multi-use trails
National Park Service	Juan Bautista De Anza National Historic Trail	Santa Clara County, San Benito County	Multi-use trails
California Department of Parks and Recreation	Pacheco State Park (Monterey-Yosemite State Trail)	Unincorporated Santa Clara and Merced counties	Multi-use trails
Santa Clara County Parks and Recreation Department	Uvas Reservoir County Park	Unincorporated Santa Clara County	Multi-use trails, fishing, picnic areas
	Coyote Lake Harvey Bear Ranch Park—Martin Murphy Trail	Unincorporated Santa Clara County	Multi-use trails, fishing, boating, camping
	Anderson Lake County Park	Unincorporated Santa Clara County	Multi-use trails, picnic areas
	Calero County Park (Calero/Santa Teresa Connector)	Unincorporated Santa Clara County	Fishing, boating, picnic areas, multi-use trails
	Penitencia Creek County Park (Penitencia Creek Trail)	Unincorporated Santa Clara County and City of San Jose	Multi-use trails
	Los Gatos Creek County Park	City of Campbell	Multi-use trails, fishing, picnic areas
	Martial Cottle Park	City of San Jose	Multi-use trails, picnic areas
	Hellyer County Park	City of San Jose	Fishing, picnic areas, playgrounds, athletic courts, multi-use trails
Santa Clara County Parks and Recreation Department, Town of Los Gatos, and Cities of Campbell and San Jose	Los Gatos Creek Trail	Town of Los Gatos and Cities of Campbell and San Jose	Multi-use trails
City of Morgan Hill and Valley Water	San Pedro Pond Park/Percolation Ponds	City of Morgan Hill	Hiking
Santa Clara Valley Open Space Authority	Coyote Valley Open Space Preserve	Unincorporated Santa Clara County	Multi-use trails

Operating Agency	Recreational Facility	Location	Primary Recreational Uses
Peninsula Open Space Trust	Rancho San Vicente	Unincorporated Santa Clara County	Fishing, multi-use trails
City of San Jose	Los Alamitos Creek Trail	City of San Jose	Multi-use trails
	Calero Creek Trail	City of San Jose	Multi-use trails
	Almaden Lake Regional Park (West Valley Trail)	City of San Jose	Picnic areas, amphitheater, playgrounds, multi-use trails, lake facilities
	Greystone Park	City of San Jose	Athletic fields and courts, picnic areas, playground
	Pfeiffer Park	City of San Jose	Multi-use trails, playground
	Jeffrey Fontana Park	City of San Jose	Multi-use trails, playgrounds
	TJ Martin Park	City of San Jose	Multi-use trails, playgrounds
	Columbus Park	City of San Jose	Multi-use trails, playgrounds, athletic fields
	Guadalupe Gardens and Park/Guadalupe River Trail	City of San Jose	Multi-use trails, public gardens
	Municipal Rose Garden	City of San Jose	Multi-use trails, public gardens, picnic areas
	Ruby Creek/Lake Cunningham Park	City of San Jose	Boating, fishing, picnic areas, skate park, multi-use trails
	Murdock Park	City of San Jose	Athletic courts and fields, playground, picnic areas
	Raymond Bernal Jr. Memorial Park	City of San Jose	Athletic fields, playgrounds, picnic areas
	Noble Park	City of San Jose	Playgrounds, water feature
	Saratoga Creek Park	City of San Jose	Multi-use trails, playgrounds, picnic areas
	Carrabelle Park	City of San Jose	Playgrounds, water feature, picnic areas
Town of Los Gatos	Howes Play Lot	Town of Los Gatos	Playground, multi-use trails

Operating Agency	Recreational Facility	Location	Primary Recreational Uses
	La Rinconada Park	Town of Los Gatos	Multi-use trails, athletic courts, picnic areas, playground
City of Saratoga	Congress Springs Park	City of Saratoga	Athletic fields, playground, picnic areas
City of Los Altos	Heritage Oaks Park	City of Los Altos	Athletic fields, playground, picnic areas
City of Cupertino	Blackberry Farm	City of Cupertino	Multi-use trails, picnic areas, playground, swimming pools, athletic courts
	Somerset Square Park	City of Cupertino	Athletic courts, playground, picnic areas
	Sterling Barnhart Park	City of Cupertino	Playground, picnic areas
City of Campbell	Campbell Park	City of Campbell	Athletic courts, playground, multi-use trail access, picnic areas
City of Gilroy	Christmas Hill Park	City of Gilroy	Athletic courts, playground, multi-use trail access, picnic areas
	Dennis Debell Uvas Creek Park Preserve	City of Gilroy	Multi-use trails
	Cydney Casper Park	City of Gilroy	Athletic courts, playground, multi-use trail access, picnic areas
City of Santa Clara	Jenny Strand Park	City of Santa Clara	Athletic courts, playground, picnic areas
City of Sunnyvale/Sunnyvale Municipal Golf Course	Sunken Gardens Golf Course	City of Sunnyvale	Golf course
Rancho Rinconada Recreation and Park District	Rancho Rinconada	City of Cupertino	Multi-use trails, picnic areas, playground, swimming pools, athletic courts
Private	Mission Ranch Tennis Courts	City of Morgan Hill	Athletic courts, multi-use trails
	Malbec Garden Park	City of Morgan Hill	Multi-use trails
	Merlot Park	City of Morgan Hill	Multi-use trails

Operating Agency	Recreational Facility	Location	Primary Recreational Uses
	Monte Vigne Park	City of Morgan Hill	Athletic courts, walking path, and playground
	Cinnabar Hills Golf Club	City of San Jose	Golf course
	Eagle Ridge Golf Club	City of Gilroy	Golf course
	Gilroy Golf Course	City of Gilroy	Golf course
	La Rinconada Country Club	City of Los Gatos	Golf course

3.16.2 Applicable Regulations, Policies, and Standards

Federal Regulations, Policies, and Standards

No federal programs or policies addressing recreational resources are applicable to the PMP.

State Regulations, Policies, and Standards

Pacheco State Park General Plan

In 2006, the California State Park and Recreation Commission approved the General Plan for Pacheco State Park, which identifies the long-term vision and goals for the park and provides guidelines for protecting park resources. Multi-use trails currently are the primary form of recreation at the park. The goals of the General Plan include working with Valley Water so that maintenance of the Pacheco Conduit does not interfere with park operations or significantly affect park resources (Santa Clara County Parks 2018).

Local Regulations, Policies and Standards

Santa Clara County

Santa Clara County Parks Strategic Plan

Santa Clara County Parks adopted the Santa Clara County Parks Strategic Plan in 2018. The Strategic Plan identifies and prioritizes current and future recreational needs across the county. Because various other government agencies, non-profit organizations, and private entities also provide recreational resources within the county, the Strategic Plan identifies strategies and priorities in consideration of these partner agencies, including Valley Water.

Santa Clara Valley Greenprint

In 2014, the Santa Clara Valley Open Space Authority adopted the Santa Clara Valley Greenprint, which is a 30-year roadmap identifying goals, priorities, and strategies to conserve land under the Santa Clara Valley Open Space Authority's jurisdiction. The Greenprint includes goals and strategies to protect and manage open space lands that provide recreational opportunities, including partnerships and collaboration with other public and private entities such as Valley Water (Santa Clara Valley Open Space Authority 2014).

Santa Clara County General Plan

Adopted in 1994, the Santa Clara County General Plan, 1995–2010, guides recreational planning efforts for the county. The Parks and Recreation Chapter of the General Plan specifically provides strategies, policies, and implementation actions for regional parks and open space lands as well as trails and pathways (Santa Clara County 1994).

Countywide Trails Master Plan

Santa Clara's Countywide Trails Master Plan, which was adopted in 1995, is an element of the Parks and Recreation Chapter of the Santa Clara County General Plan. The primary objective of the Countywide Trails Master Plan is to develop a comprehensive network of regional, sub-regional, and connector trails throughout the county. Santa Clara County Parks provides general oversight and coordination of the overall trail system in accordance with the Countywide Trails Master Plan (Santa Clara County Trails Plan Advisory Committee 1995). In 2022, Santa Clara County Parks initiated an update to the Countywide Trails Master Plan Map. The map update intends to revise the plan map and information on conceptual trail routes to reflect current planning and support implementation of the countywide trails network (Santa Clara County Parks 2024). The update is anticipated to be completed and approved by the Board of Supervisors in 2024 (Victoria Heyse 2024).

General Plans of Incorporated Cities within Santa Clara County

As summarized in , various recreational resources (such as parks and trails) are owned and operated by incorporated cities or towns in Santa Clara County. Of these local municipalities, the following have general plans that contain policies and planning strategies related to recreational resources:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The recreation, open space, parks, and trails policies and guidelines in these general plans commonly encourage trail connectivity and interagency partnerships and coordination with other surrounding public entities, including Valley Water, to establish, maintain, and operate recreational facilities where joint uses occur within shared easements.

Merced County

Pacheco State Park

Approximately 2.5 miles of pipeline within unincorporated Merced County, is within Pacheco State Park. The General Plan for Pacheco State Park identifies the long-term vision and goals for

the park and provides guidelines for protecting park resources (California Department of Parks and Recreation 2006). The General Plan includes Visitor Experience goals and guidelines for trails, of which the 2.5-mile portion of the pipeline within the Park may intersect.

3.16.3 Impact Assessment Methodology

The impact presented in this section was evaluated qualitatively, based on the potential for implementation of the PMP to disrupt access to and use of existing recreational resources and/or change the quality of the recreation experience (e.g., through visual changes in the landscape), resulting in the increased use of other recreational areas that could lead to deterioration or need for new recreational facilities.

As detailed in Chapter 2, Project Description, the scope of the PMP is limited to inspection and maintenance of Valley Water's existing water conveyance systems and facilities. No new or expanded infrastructure would be constructed or operated under the PMP. After completion of inspection and maintenance activities, operation of the PMP system would continue, unchanged from previous operation. As such, the analysis herein is limited to construction-related impacts that have the potential to result in adverse physical impacts to recreational resources.

Significance Criteria

The impacts of the program on recreation resources would be considered significant if they exceeded the following standards of significance:

- **Impact REC-1:** Increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- **Impact REC-2:** Include recreational facilities or expansion of recreational facilities which might have an adverse physical effect on the environment.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's BMP Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's BMP Handbook does not contain any recreation-related BMPs applicable to the program.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the program to avoid or reduce impacts from program implementation. Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to recreation are provided in Table 3.16-2.

Table 3.16-2 Recreation-Related AMMs

AMM No.	AMM Requirements
AMM REC-1	**Notify Agencies with Jurisdiction and Coordinate Regarding Potential Disturbance to Trails and Areas Adjacent to Parks.** As part of its Annual Work Plan, Valley Water staff shall notify the authority responsible for trails or areas adjacent to parks that could be subject to closure. The type of work, location, and duration of each program activity that will affect trails or other facilities shall be identified, and scheduling and staging shall be coordinated to minimize the area and period of disturbance.
AMM REC-2	**Prepare and Implement a Construction Operations Plan.** Valley Water shall prepare a Construction Operations Plan to outline access, staging, stockpiling of spoils and other related activities. Vehicle access shall be restricted to paved surfaces where possible, and staging areas shall be maintained at least 25 feet from trails and other active recreational facilities where possible. Where practicable, Valley Water shall avoid completely blocking trail access or recreational use and provide alternative routes, signage, and safety fencing, in coordination with the authority responsible for the recreational facility. Where work is proposed adjacent to a recreational trail, warning signs shall be posted several feet beyond the limits of work.
AMM REC-3	**Repair Any PMP-Related Damage to Trails or Adjacent Park Facilities.** On completion of work, Valley Water shall repair any damage to trails or adjacent park facilities caused by the maintenance work. The repair shall return the facility to a level comparable to that existing before the work began. All work materials shall be removed from the site no later than 24 hours after the work is completed.
AMM REC-4	**Direct Releases to Avoid Crossing Trails and Slopes within Recreational Areas.** All releases shall be directed to avoid crossing trails and avoid slopes within recreational areas wherever possible. If avoidance is not possible, energy dissipation and erosion control measures shall be implemented consistent with Hydrology BMPs to avoid significant effects. Restoration of the trail or slope shall be completed upon completion of construction. Restoration shall be to the satisfaction of the authority responsible for the trail or park.

Santa Clara Valley Habitat Plan Conditions

As described in Chapter 2, Project Description, Valley Water would implement VHP conditions as part of the program in VHP-covered program areas. No VHP conditions are applicable to recreation.

3.16.4 Impact Analysis

Impact REC-1: Increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (less than significant)

As summarized in Table 3.16-1, various pipelines and facilities throughout the program area cross or are in proximity to recreational resources. Therefore, implementation of program activities may result in impacts on these recreational resources, such as park or trail closures and changes to the visual landscape for recreationists during construction. These impacts could result in an increase in public use of other nearby recreational resources. As discussed in Chapter 2, Project Description, program activities would be performed by implementing

various common tasks. These tasks that would have the potential to affect recreational resources would include:

- Setup, staging, and access
- Pump-out of vaults/manholes
- Dewatering
- Refilling
- Excavation, construction, and other ground disturbance
- Repair of pipeline system infrastructure

A discussion of impacts to recreational resources is presented by PMP task below and grouped where certain tasks would result in similar impacts.

Setup, Staging, and Access

Setup, staging, and access would involve the transport of materials and equipment to a work site and the setup and storage of those materials and equipment on site. In addition to highways, city streets, and residential roadways, access could require travel to and from program work sites using recreational paths or trails and some unpaved or off-road areas. Similarly, setup and staging of equipment and materials occasionally may require the use of recreational areas. As described in Chapter 2, Project Description, Valley Water would implement AMM REC-2, which restricts vehicle access to paved surfaces where possible, and requires that staging areas be maintained at least 25 feet from trails and other active recreational facilities where possible. AMM REC-2 also requires Valley Water to avoid completely blocking trail access or recreational use where practicable, as well as provide alternative routes, signage, and safety fencing, in coordination with the authority responsible for the recreational facility. Nonetheless, use of trails or recreational areas to accommodate construction access and staging potentially could impair use of these recreational facilities temporarily, resulting in the need to close these facilities to the public. The duration of closures generally would range between one day to a few weeks, depending on the specific program activities being conducted. During these closures, the public would be expected to use alternative, nearby recreational facilities, thereby increasing the use of these alternative recreational facilities. As presented in Table 3.16-1 over 50 recreational facilities cross or are adjacent to program pipelines. Furthermore, the program area as a whole, including areas not proximate to program pipelines, encompasses dozens more parks, trails, and open spaces across Santa Clara County. Therefore, the public's use of alternative facilities would be dispersed across various nearby facilities, thereby reducing the potential for any one facility to experience an increase in use that would result in substantial deterioration. In the event closure of any recreational facilities is required, Valley Water would implement AMM REC-1, which would require Valley Water to notify and coordinate with applicable park operating agencies in advance to minimize the disturbance footprint and closure period.

Driving and staging heavy equipment and stockpiling materials in recreational areas or on trails also could damage the surface substrate of these facilities. Valley Water would implement

AMM REC-3 as part of the PMP. AMM REC-3 would require the restoration of any disturbed surfaces to near pre-activity conditions. The impact would be **less than significant**.

Pump-out, Dewatering, and Refilling

Pump-out, dewatering, and refilling activities potentially could impact trail or park facilities if any discharge of water created a hazard or caused erosion to a trail or surface area. This could occur in either urban or rural environments but would be more likely where trails are adjacent to creeks and subject to more erosive forces. Erosion to trail or park facilities as a result of such discharges would directly deteriorate trail or park facilities and could result in the need to close recreational facilities to ensure public safety. Valley Water would implement AMMs, such as AMM REC-4, as part of the PMP. AMM REC-4 would require that all discharges be directed to avoid crossing trails and slopes in recreational areas where feasible. AMM REC-4 also would require restoration of recreational resources disturbed by discharges. Implementation of AMM REC-4 would reduce the potential for discharges to damage trail or park facilities and ensure any impacted trail or park facilities are restored. Therefore, program impacts from pump-out, dewatering, and refilling on recreational facilities would be minimized. The impact would be **less than significant**.

Excavation, Construction, and Repair

Excavation, construction, and other ground disturbance would be required for the majority of program activities, including repair or in-kind replacement of a section of pipeline and repair of access roads, pipeline parts, and vaults. Most repairs would occur within a pipeline or within an excavated pipeline trench. Excavation, construction, and/or repair activities could require placement of excavation spoils or other materials and the use of equipment along or near the activity work site, temporarily blocking recreational resources, such as trail areas, and/or disturbing recreation surfaces and/or substrates. Worksite activities would be relatively minor and of short duration, lasting from a few hours to a few weeks at a given location. As discussed above, recreationalists are anticipated to use alternative recreational facilities during park closures. Due to the abundance of alternative recreational facilities available across the program area, use of alternative facilities would be dispersed across various nearby facilities, thereby reducing the potential for any one facility to experience an increase in use that would result in substantial deterioration. As discussed above, Valley Water would implement AMM REC-1, which would require that Valley Water coordinate the construction schedule and staging with park agencies in advance of the planned activities, to minimize potential disturbances on recreational facility operations. Furthermore, implementation of AMM REC-2 would require preparation of a Construction Operations Plan to minimize the impact on recreational facilities to the extent feasible. Valley Water also would implement AMM REC-3, to restore any disturbed surface substrates to near pre-activity conditions. The impact would be **less than significant**.

Significance Determination

Less than Significant

Mitigation
No mitigation would be required for Impact REC-1.

Impact REC-2: Include recreational facilities, nor would it require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (no impact)

The PMP is limited to activities associated with operation and maintenance of existing water conveyance infrastructure and would not involve or require the construction or expansion of any recreational facilities. **No impact** would occur.

Significance Determination

No Impact

Mitigation
No mitigation would be required for Impact REC-2.

3.17 Public Services

This section provides an overview of the public services in the program area; applicable regulations, policies, and standards; and a discussion of the program's potential impacts on public services. For this assessment, public services include fire and police protection and schools in the program vicinity. Information regarding parks and other recreational resources in the program area and PMP-related impacts on those facilities and resources are discussed in Chapter 3.16, Recreation.

3.17.1 Environmental Setting

The environmental setting for this section includes public services throughout Santa Clara County, a limited section of eastern Merced County in which a 2.5-mile segment of the Pacheco Conduit is located, and the approximate 4.3-mile segment of the Santa Clara Conduit in San Benito County. The program area is served by a variety of public agencies for the provision of fire and police protection (including emergency medical services via paramedic services as a subset of the various fire protection agencies and districts), and schools. These services are provided by a combination of cities and counties, as well as by special districts, such as fire and school districts. Fire and police protection service agencies maintain mutual aid agreements, allowing those agencies to share their facilities and services across jurisdictional lines when their assistance is needed.

Fire Protection

Santa Clara County

The Santa Clara County Fire Department (SCCFD) operates approximately 15 fire stations and provides fire, safety, paramedic, and hazardous materials services for unincorporated portions of the county, as well as the cities of Campbell, Cupertino, Los Altos, Morgan Hill, Saratoga, and Town of Los Gatos. Other incorporated cities in the county (e.g., Gilroy, Sunnyvale, San Jose, Mountain View, and Santa Clara) operate independent fire departments (SCCFD 2023).

The SCCFD would provide the majority of fire, safety, paramedic, and hazardous materials services in the program area; however, if program-related activities require these types of emergency services in Gilroy, Sunnyvale, San Jose, Mountain View, or Santa Clara, they would be provided by the independent emergency service providers that are operated by those cities.

San Benito County

The portion of the program area that is within unincorporated San Benito County also is within a California Department of Forestry and Fire Protection (CAL FIRE) State Responsibility Area (SRA) and would be served by CAL FIRE for fire protection services (CALFIRE, n.d.). In addition, CAL FIRE also has a contract with San Benito County that provides aerial fire protection and support from the Hollister Air Base (San Benito County 2022).

Merced County
CAL FIRE is the primary agency responsible for fire protection services for Pacheco State Park in Merced County, through which approximately 2.5 miles of the Pacheco Conduit passes. Section 3.13, Wildfire, presents additional information regarding CAL FIRE's role as it relates to the PMP. Mutual aid agreements enable CAL FIRE to access fire protection services from federal, State, and local agencies (including SCCFD), specific to an incident or emergency. These mutual aid agreements allow adequate personnel and equipment to be provided as needed.

CAL FIRE Station 31 is approximately 0.1 mile north of the Pacheco Conduit. The program area is within an SRA, and CAL FIRE has a legal responsibility to provide fire protection on all SRA lands (CALFIRE 2007).

Police Services and Law Enforcement

Santa Clara County
The Santa Clara County Sheriff's Office (SCCSO) provides law enforcement services to the unincorporated portion of the program area in Santa Clara County (SCCSO 2023). Incorporated cities, such as San Jose, Gilroy, and Mountain View, operate independent police departments, which enforce local, State, and federal laws within their respective city limits.

San Benito and Merced Counties
Both the San Benito County Sheriff's Office and Merced County Sheriff's Office provide law enforcement services to the portions of their respective counties in the program area.

Statewide
The California Highway Patrol (CHP) is responsible for patrolling approximately 1,200 miles of roadway in Santa Clara and San Benito counties, from its Hollister–Gilroy area office, including the portion of State Route 152 (SR 152) west of Pacheco Pass (CHP 2023). CHP patrols the roadways in Merced County from its Los Banos area office in Los Banos, California. In addition to CHP, the California Department of Parks and Recreation (CDPR), California Department of Fish and Wildlife (CDFW), and CAL FIRE law enforcement personnel also respond to law enforcement needs within their respective jurisdictions (e.g., CDPR's Santa Cruz, Diablo Range, and Central Valley regions, CDFW's Bay Delta Region, and Central Region and CAL FIRE SRAs) throughout the program area (CDFW 2023; CALFIRE 2023b).

Schools
Both multiple private schools and public schools are in the program area. A list of public and private schools within 0.25 mile of Valley Water pipelines is presented in Table 3.4-1. Several schools are within approximately 200 feet of the Valley Water pipelines, including the following:

- Downtown College Prep—Alum Rock
- Escuela Popular/Center for Training and Careers, Family Learning
- ACE Charter High
- Pegasus High
- Escuela Popular Accelerated Family Learning

- Rocketship Spark Academy
- Gilroy High
- Noddin Elementary
- St. Victor Elementary School
- Challenger School - Almaden

3.17.2 Regulatory Setting

Federal Regulations, Policies, and Standards

No federal programs or policies addressing public services are applicable to the PMP.

State Regulations, Policies, and Standards

California Master Mutual Aid Agreement

The California Master Mutual Aid Agreement is a framework agreement between the State and local governments that provides for aid and assistance through the interchange of services and facilities (Marshall 2023). This aid agreement includes fire, police, medical and health, communications, and transportation services, as well as facilities to cope with issues related to rescue, relief, evacuation, rehabilitation, and reconstruction.

Pacheco State Park General Plan

In 2006, the California State Park and Recreation Commission approved the General Plan for Pacheco State Park, which identifies the long-term vision and goals for the park and provides guidelines for protecting park resources (California State Park and Recreation Commission 2006). The following goals from the Pacheco State Park General Plan may apply to the PMP:

Goal OPS-A2 Provide for intermodal emergency access to key areas of the Park as necessary.

Guideline Work with adjoining landowners to clarify the ownership and location of Whiskey Flat Road and any easements that may exist. Ensure that emergency access for Park staff members and entities such as [CAL FIRE] for wildland fire access and other such uses is permitted.

Local Regulations, Policies, and Standards

Santa Clara County

Santa Clara County General Plan

The following policy in the Santa Clara County General Plan applies to public service uses as related to the PMP (Santa Clara County 1994):

R-LU 37: Population shall be held to a minimum, and land uses shall be of a nature and intensity which do not require higher levels of public services than those presently provided.

General Plans of Incorporated Cities within Santa Clara County

The program area overlies a number of local jurisdictions within Santa Clara County. The following municipal General Plan goals and policies may be relevant to the PMP:

- City of Campbell (City of Campbell 2001)
- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The policies for each municipality are too numerous to identify here. However, the general plans commonly have goals and policies that are focused on providing an appropriate level of public services (e.g., police, fire protection, and schools), so that new development projects appropriately contribute funding to develop the new facilities required to serve the development, as well as to protect community health and safety, and general welfare. Therefore, many of these policies are not applicable to PMP implementation.

San Benito County

San Benito County General Plan

A small portion of the program area in unincorporated San Benito County and would be subject to the policies of the Public Facilities and Services Element of the San Benito County General Plan. The Public Facilities and Services Element is intended to ensure that facilities and services meet the needs of all residents and businesses. Its goals and policies focus on providing an adequate level of service and lay out consistent standards for developing new facilities.

The following policies are relevant to program activities in San Benito County (San Benito County 2015):

Goal PFS-1: To provide residents and businesses with quality, cost-effective, and sustainable public facilities and services.

Policy PFS-1.2: Essential Facilities and Services. The County shall ensure that adequate public facilities and services essential for public health and safety are provided to all county residents and businesses and maintained at acceptable service levels. Where public facilities and services are provided by other agencies, the County shall encourage similar service level goals.

Policy PFS-1.4: Level of Service. The County shall preserve, improve, and replace public facilities as necessary to maintain adequate levels of service for existing and future development. Where public facilities and services are provided by other agencies, the County shall encourage similar service level goals.

Merced County

Merced County General Plan

The Public Facilities and Services Element of the Merced County General Plan provides guidance for the expansion and/or upgrading of services and facilities in the county (Merced County 2013). No goals and policies related to public services are applicable to the PMP.

3.17.3 Impact Assessment Methodology

The impacts of the program were evaluated qualitatively, based on the potential for the proposed maintenance activities to disrupt existing public services, such as fire and police protection, schools, parks, and other public facilities. As detailed in Chapter 2, Project Description, the scope of the PMP is limited to inspection and maintenance of Valley Water's existing water conveyance systems and facilities. No new or expanded infrastructure would be constructed or operated under the PMP. After completion of inspection and maintenance activities, operation of the PMP system would continue, unchanged from previous operation. Therefore, the analysis herein is limited to construction-related activities that potentially could result in impacts on public services.

Significance Criteria

The impacts of the program on public services would be considered significant if they exceeded the following standard of significance:

- **Impact PUB-1:** Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services, police protection, schools, parks, and other public facilities.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's Best Management Practices Handbook does not contain any public services-related BMPs applicable to the PMP.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the program to avoid or reduce impacts from program implementation.

Therefore, the impact analyses were conducted assuming application of these AMMs. The AMMs applicable to public services are shown in Table 3.17-1.

Table 3.17-1 Public Services-Related AMMs

AMM No.	AMM Requirements
AMM TRA-1	**Traffic Control Plan.** For program activities requiring encroachment into a city, county, or State-owned road, Valley Water or its contractor shall prepare a Traffic Control Plan (TCP). The TCP shall be prepared by a California-licensed Traffic Engineer or licensed civil professional engineer and conform to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and the Manual on Uniform Traffic Control Devices. At a minimum, the TCP shall include the following elements: • Circulation and detour plans to minimize impacts on local street circulation (haul routes will minimize truck traffic on local roadways to the extent possible). • A description of emergency response vehicle access (an alternate route shall be identified if the road or area is completely blocked, preventing access by an emergency responder). • Procedures to schedule construction activities in a manner that will minimize overlapping construction phases that require truck hauling to the extent feasible. • Identification of staging areas that will be designated for storage of all equipment and materials in a manner that minimizes obstruction to traffic. • Identification of designated construction worker parking locations. • Procedures for use of temporary signs, flashing lights, barricades, flaggers, and other traffic safety personnel or devices where required to control or direct the flow of traffic. • Temporary traffic marking installation requirements where required to direct the flow of traffic (traffic markings will be maintained for the duration of road/lane closure and removed when completed). • Procedures to keep sidewalks and bicycle lanes open for pedestrians and cyclists, respectively, to the extent safe, or identification of detour routes and signing if sidewalks or bicycle lanes will be closed. • Procedures to maintain driveway access to residences or businesses unless other arrangements are made. A minimum of 12-foot-wide travel lanes will be maintained unless otherwise approved by Valley Water and/or an agency with encroachment jurisdiction. Valley Water or its contractors will submit the TCP to the agency with encroachment jurisdiction in advance of program activities, to provide the agency with the opportunity to review the TCP and provide additional or alternative recommendations as appropriate. The contractor must submit documentation to Valley Water that the plan has been approved by the appropriate jurisdictional agency prior to the commencement of construction.
AMM TRA-2	**Equipment Routing near Roads and Pedestrian Pathways.** Pipes, hoses, and other equipment will be routed around roadways and pedestrian pathways (e.g., sidewalks, trails) to the extent feasible. When rerouting is not possible, pipes and hoses will be covered, and warning signage will be posted several feet beyond

AMM No.	AMM Requirements
	the location where the road or pathway is crossed by pipes or hoses, to notify the public regarding the hazard.

3.17.4 Impact Analysis

Impact PUB-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for public services including fire protection, police protection, schools, parks, and other public facilities (less than significant)

Information regarding parks and other recreational resources in the program area and PMP-related impacts on those facilities and resources are discussed in Chapter 3.16, Recreation. Other public services are discussed below.

The PMP would not involve construction of any new development or expansion of capacity to serve new development; therefore, program implementation would not induce population growth or result in an increased demand for public services, such as fire and police, schools, or other public facilities. Because program implementation would not result in impacts associated with the provision of any new public services or construction of new public service facilities, the PMP would not result in significant impacts as defined by the significance criterion. Nonetheless, implementation of program activities could result in significant impacts on existing or proposed fire and police protection services if program activities were to impede emergency access (thereby delaying emergency response times). Potential impacts related to inadequate emergency access and response related to fire and police protection services are discussed in Section 3.5, Traffic and Transportation (Impact TRA-4). As described in Chapter 2, Project Description, Valley Water would implement AMM TRA-1, which would require a Traffic Control Plan (TCP) be prepared and implemented for activities in a city, county, or State-owned road. The TCP would contain circulation and detour plans and provide access for emergency response vehicles. Valley Water would also implement AMM TRA-1, which would minimize routing of equipment (e.g., pipes, hoses, etc.) across roadways, thereby reducing the potential for roadway hazards or obstructions. Thus, program tasks requiring work in roadways would not adversely affect emergency response times. The PMP would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or generating a need for new or physically altered government facilities. The impact would be **less than significant**.

Significance Determination
Less than Significant

Mitigation
No mitigation would be required for Impact PUB-1.

3.18 Agriculture and Forestry

This section provides an overview of the agriculture and forestry resources in the program area; applicable regulations, policies, and standards; and a discussion of potential impacts on agriculture and forestry resources from program implementation.

3.18.1 Environmental Setting

The environmental setting for this section includes agricultural resources throughout the program area, including Santa Clara County, a limited section of eastern Merced County in which an approximately 2.5-mile segment of the Pacheco Conduit is located, and an approximately 2-mile segment of the Santa Clara Conduit pipeline in San Benito County.

No forest land as defined in Section 12220[g] of the California PRC, timberland as defined in Section 4526 of the PRC, or timberland zoned Timberland Production as defined in Section 51104[g]) of the California Government Code (CGC) occurs in the program area, and therefore forestry resources are not discussed further.

Agricultural Resources

Santa Clara County encompasses the majority of the program area, more than 834,560 acres with almost half identified as agricultural land by the California Department of Conservation (DOC), Division of Land Resource Protection[1] and approximately a quarter under Williamson Act contracts (Valley Water 2021). The majority of the program area in Santa Clara County is zoned Agricultural Ranchlands as part of a Rural Base District. The Santa Clara County General Plan classifies its land into two geographic regions: North Valley and South Valley. The North Valley is heavily urbanized, while a majority of Santa Clara County's cultivated agricultural land is in the South Valley. Agricultural production includes vegetable crops, fruit and nut crops, field crops, nursey crops, and livestock and poultry. Water supply to support agricultural activities is sourced through groundwater, local and imported surface water, and recycled water.

San Benito County encompasses approximately 889,600 acres, with about three-quarters classified as agricultural land and over half under Williamson Act contracts (San Benito County 2020; Valley Water 2021). The program area in San Benito County contains Prime Farmland. No Williamson Act lands are in the program area. The Santa Clara Conduit is the only pipeline in the program area that traverses San Benito County, passing through areas in agricultural production.

[1] The DOC defines agricultural land based on the land's soil quality and irrigation status. The best quality land is called Prime Farmland (California DOC 2023).

Merced County encompasses approximately 1,266,560 acres, and the majority of the land is classified as agricultural land and more than a quarter under Williamson Act contracts (Valley Water 2021). The Pacheco Tunnel Pipeline is the only pipeline in the program area that traverses Merced County and is within lands classified as grazing land. The program area within Merced County is limited to the western portion of the county, which includes Pacheco State Park. There are no Williamson Act lands in the program area in Merced County.

As shown in Figure 3.18-1, the majority of agricultural land in the program area is classified as grazing land by the DOC. Grazing land is defined as land that contains existing vegetation suitable for grazing livestock during some portion of the year.

Information on specific land use zoning designations (e.g., Agricultural Ranchlands) in the program area is presented in Section 3.15, Land Use and Planning.

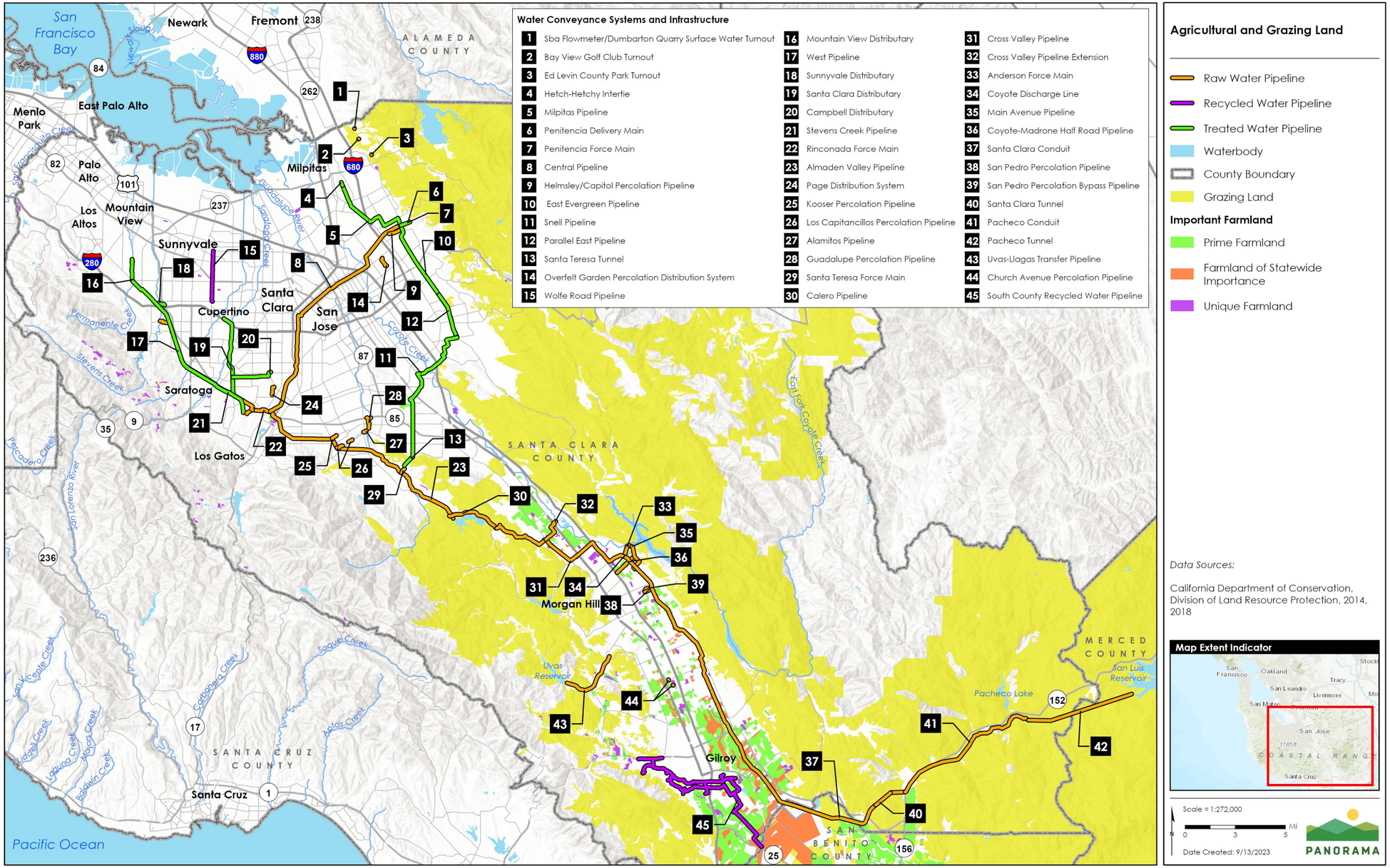
Department of Conservation Farmland Mapping and Monitoring Program

The DOC classifies land according to agricultural suitability through the Farmland Mapping and Monitoring Program (FMMP) based on land uses, irrigation, and soil conditions. Section 21060.1 of the PRC defines *agricultural land* as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. FMMP categories applicable to CEQA are defined as follows:

- **Prime Farmland.** Land with the best combination of physical and chemical features able to sustain long-term agricultural production. This farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Additionally, land must have been used at some point in time for irrigated agricultural production during the four years prior to the mapping date.
- **Farmland of Statewide Importance.** Land similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some point over the previous four years prior to the mapping date.
- **Unique Farmland.** Land of lesser quality soils used for the production of the state's leading agricultural crops. This farmland is usually irrigated but may include non-irrigated orchards or vineyards found in some climatic zones of California. Additionally, land must have been cropped at some point over the previous four years prior to the mapping date.

As shown in Figure 3.18-1, FMMP-classified agricultural lands are scattered throughout the program area, with denser prevalence in the southern portion.

Figure 3.18-1 Agricultural Land and Grazing Land in the Program Area



Data sources: California DOC, Division of Land Resource Protection 2014; 2018

Williamson Act Contract Lands

The California Land Conservation Act of 1965, also known as the Williamson Act, enables local governments to enter into contracts with private landowners for restricting specific parcels of land to agricultural or related open-space use for periods of 10 to 20 years. Additional regulatory information regarding the Williamson Act is presented in Section 3.18.3. As shown in Figure 3.18-2, the program area encompasses scattered parcels in Williamson Act contracts, with the majority occurring in the southern and eastern portions of the program area.

3.18.2 Regulatory Setting

No forestry resources are located in the program area; therefore, no federal, state, or local regulations related to forestry resources would be applicable to the program, and these are not discussed further.

Federal Regulations, Policies, and Standards

No federal programs or policies related to agricultural resources are applicable to the PMP.

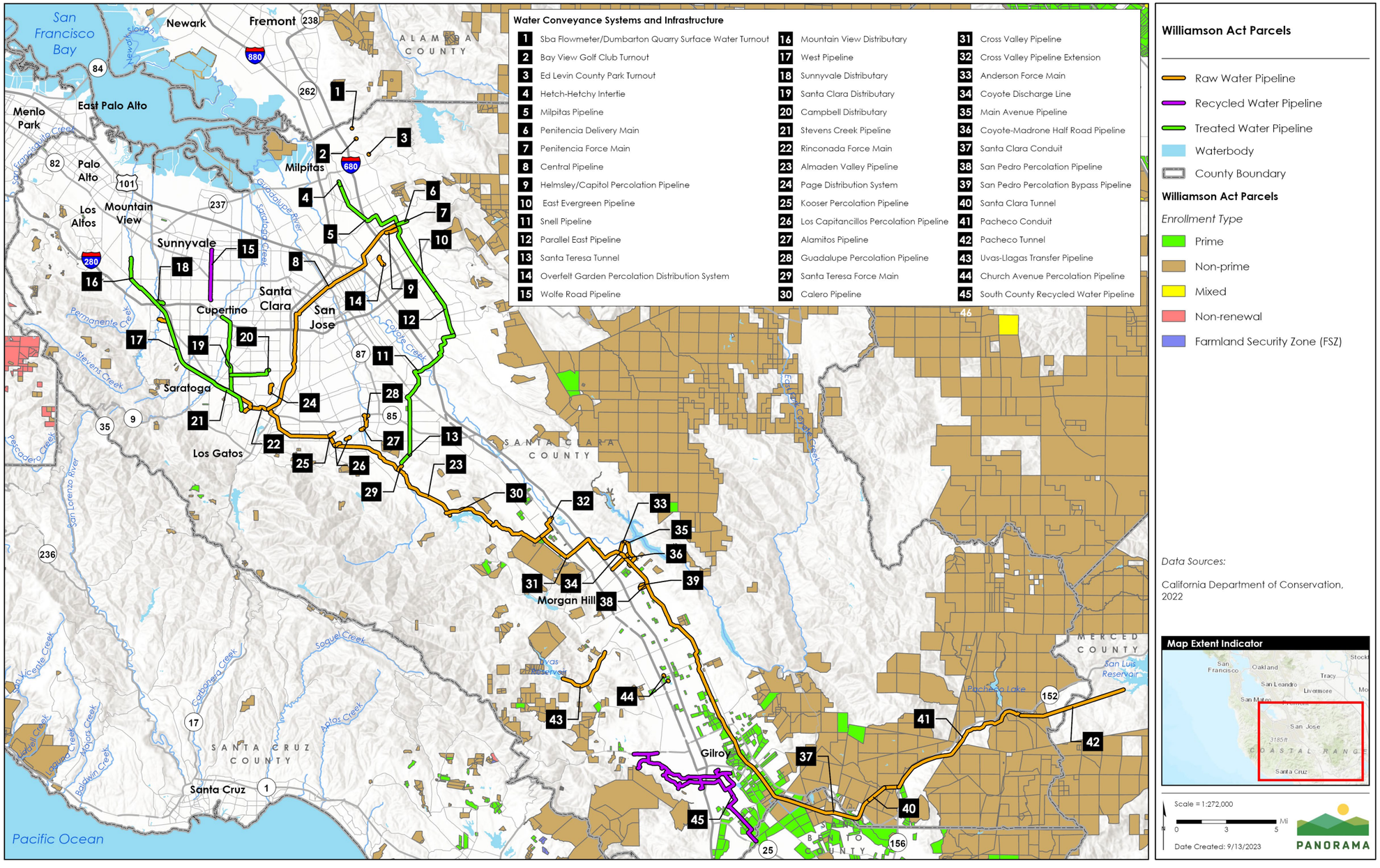
State Regulations, Policies, and Standards

Williamson Act Contracts

The Williamson Act is the principal method for encouraging the preservation of agricultural lands in California. The Williamson Act enables local governments to enter into contracts with private landowners for restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are based on farming and open space uses as opposed to full market value.

Section 512191 of the CGC states that acquisition of any Williamson Act contract lands by a public agency requires notification to the DOC and the local governing body (California DOC 2022a). However, Section 51291.5 of the CGC exempts noticing requirements for public agencies for acquisition of land for the erection, construction, or alteration of gas, electric, piped subterranean water or wastewater, or communication facilities.

Figure 3.18-2 Williamson Act Contracts in the Program Area



Sources: California DOC 2022b

Pacheco State Park General Plan

In 2006, the California State Park and Recreation Commission approved the General Plan for Pacheco State Park, which identifies the long-term vision and goals for the park and provides guidelines for protecting park resources. Grazing occurs in the western portion of the park (California Department of Parks and Recreation 2006). The goals of the General Plan include working with Valley Water so that maintenance of the Pacheco Conduit does not interfere with park operations or significantly affect park resources (California Department of Parks and Recreation 2006).

Local Regulations, Policies, and Standards

Santa Clara County

Santa Clara County General Plan

The Agriculture and Agricultural Resources section of the 1994 Santa Clara County General Plan identifies strategies and policies to manage agriculture and forestry resources in the County (Santa Clara County 1994). Policies applicable policies the program are as follows:

Policy C-RC 37: Agriculture should be encouraged and agricultural lands retained for their vital contributions to the overall economy, quality of life, and for their functional importance to Santa Clara County: (a) local food production capability; (b) productive use land not intended for urban development; and (c) protection of public health and safety.

Policy C-RC 40: Long term land use stability and dependability to preserve agriculture shall be maintained and enhanced by the following general means: (a) limiting the loss of valuable farmland from unnecessary and/or premature urban expansion and development; (b) regulating non-agricultural uses in agricultural areas, and their intensity and impacts on adjacent lands; (c) maintaining agriculturally-viable parcel sizes; and (d) minimizing conflicts between adjacent agricultural and non-agricultural land uses, through such means as right-to-farm legislation and mediation of nuisance claims.

General Plans of Incorporated Cities within Santa Clara County

The program area overlies a number of local jurisdictions within Santa Clara County. Of these municipalities, the following have general plans that contain policies and planning strategies related to agricultural resources:

- City of Cupertino (City of Cupertino 2014)
- City of Gilroy (City of Gilroy 2020)
- City of Los Altos (City of Los Altos 2002)
- City of Milpitas (City of Milpitas 2021)
- City of Morgan Hill (City of Morgan Hill 2016)
- City of Mountain View (City of Mountain View 2012)
- City of San Jose (City of San Jose 2011)
- City of Santa Clara (City of Santa Clara 2010)
- City of Saratoga (City of Saratoga 2007)
- City of Sunnyvale (City of Sunnyvale 2011)
- Town of Los Gatos (Town of Los Gatos 2022)

The policies for each listed municipality focus on maintaining the viability of agriculture, preserving lands for agricultural activity, and establishing buffers to minimize conflicts between agricultural and non-agricultural land uses.

San Benito County General Plan

The Land Use Element of the 2015 San Benito County General Plan identifies specific policies for the protection and support of agricultural and ranching industries in the county. Policies applicable to the program include the following (San Benito County 2015):

Policy LU-3.2: The County shall protect the integrity of existing agricultural resources and provide for flexibility and economic viability of farming and ranching operations.

Policy LU-3.10: If new development permanently converts Prime Farmland that is Class 1 soil to non-agricultural uses, the County shall encourage project applicants to preserve up to an equal number of Prime Farmland acres (i.e., up to a 1:1 ratio) either on- or offsite. An applicant may pay an in-lieu mitigation fee(s) for some or all of the converted Prime Farmland that is designated Class 1 soils to non-agricultural uses as agreed in a development agreement. The funds collected shall be used for agricultural protection and/or affiliated programs within San Benito County. Furthermore, the County shall work with the City of San Juan Bautista and the City of Hollister to encourage them to adopt a similar agricultural conversion mitigation ratio.

Other elements of the San Benito County General Plan also include policies regarding the preservation of open space areas that support agriculture. These policies include the following:

Policy NCR-1.1: The County shall support and encourage maintenance of open space lands that support natural resources, agricultural resources, recreation, tribal resources, wildlife habitat, water management, scenic quality, and other beneficial uses.

Merced County General Plan

As discussed in Section 3.15, Land Use, the portion of the program area within unincorporated Merced County is designated as Foothill Pasture, which is considered an agricultural-related rural land use (Merced County 2013). The following policy is applicable to the program:

Policy LU-2.3: Land Use Activity Limitations. Limit allowed land use within Agricultural and Foothill Pasture areas to agricultural crop production, farm support operations, and grazing and open space uses.

3.18.3 Impact Assessment Methodology

The impacts of program implementation were evaluated qualitatively, based on the potential for the proposed maintenance activities to impact agricultural lands. As discussed in Chapter 2, Project Description, program activities would be performed by implementing various common tasks. The program tasks that could affect agricultural resources would include the following:

- Setup, staging, and access
- Excavation, construction, and other ground disturbance
- Repair of pipeline infrastructure

These tasks are evaluated collectively in the following impact discussions. After completion of these inspection and maintenance activities, operation of the program system would continue, unchanged from previous operation. Therefore, the analysis herein is limited to the program-related impacts resulting from these tasks.

Land entitlement activities under the PMP would involve the acquisition of additional ROWs or easements for Valley Water's existing pipeline alignments, thereby providing Valley Water with land rights to continue to access its pipeline infrastructure for ongoing inspection and maintenance activities under the program. Implementation of these land entitlement activities would not result in physical impacts on the environment or changes to operation of the pipelines. Therefore, land entitlement activities are not evaluated further.

Significance Criteria

The impacts of the program on agriculture and forestry resources would be considered significant if they would exceed the following standards of significance:

- **Impact AG-1:** Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- **Impact AG-2:** Conflict with existing zoning for agricultural use, or a Williamson Act contract.

- **Impact AG-3:** Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

Criteria Requiring No Further Evaluation

The significance criteria that are not applicable to the program are as follows, along with justification for why further consideration is not warranted and a no impact determination is appropriate:

- Conflict with existing zoning for, or cause rezoning of, forest land as defined in Section 12220(g) of the Public Resources Code, timberland as defined in Section 4526 of the Public Resources Code, or timberland zoned Timberland Production as defined in Section 51104(g) of the California Government Code.
- Result in the loss of forest land or conversion of forest land to non-forest use.

No forest land as defined in Section 12220(g) of the PRC, timberland as defined in Section 4526 of the PRC, or timberland zoned Timberland Production as defined in Section 51104(g) of the CGC occurs in the program area. Therefore, no impact on forest land would occur from program implementation.

Valley Water Best Management Practices

As noted in Chapter 2, Project Description, Valley Water would incorporate a range of BMPs from Valley Water's Best Management Practices Handbook (Appendix C) to avoid and minimize adverse effects on the environment that could result from the program. Valley Water's BMP Handbook does not contain any agricultural resource-related BMPs applicable to the program.

Program-Specific Avoidance and Minimization Measures

As described in Section 2.7.3 of the Project Description, Valley Water would implement specific AMMs as part of the PMP to avoid or reduce impacts from program implementation. There are no AMMs applicable to agricultural resources.

3.18.4 Impact Analysis

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use (less than significant)

As shown in Figure 3.18-1, several program pipelines traverse agricultural areas that are designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, including the South County Recycled Water Pipeline, Santa Clara Conduit, and the Cross Valley Pipeline. PMP activities along these pipelines may require the temporary use of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to accommodate staging and access. Excavation, construction, and/or repair of the pipeline may also be required within

these designated farmlands. As under the existing PMP, all program activities would be short-term and temporary, requiring a few days to a few weeks to complete. Furthermore, these areas would be restored to their previous conditions upon completion of the maintenance or inspection activity, and any affected farmland would be returned to its previous use. Therefore, the PMP would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. The impact would be **less than significant**.

Significance Determination
Less than significant

Mitigation
No mitigation would be required for Impact AG-1.

Impact AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract (less than significant)

As shown in Figure 3.15-1, program pipelines such as the Pacheco Tunnel Pipeline, the Pacheco Conduit, the Uvas-Llagas Transfer Pipeline, the South County Recycled Water Pipeline, the Cross Valley Pipeline, and the Santa Clara Conduit are in areas zoned for agricultural use (including the Agricultural Ranchlands and Exclusive Agriculture zones in unincorporated Santa Clara County). Several program pipelines also traverse parcels that are under Williamson Act contracts, including the South County Recycled Water Pipeline, Cross Valley Pipeline, Santa Clara Conduit, and Pacheco Conduit, as shown in . As under the existing PMP, the program tasks under the updated PMP (e.g., staging, access, excavation, and repair of pipelines) may occur on lands zoned for agricultural uses and/or land under Williamson Act contracts. The program would not conflict with existing zoning for agricultural uses, as it would maintain existing pipelines and appurtenances in the existing pipeline corridors and program tasks would not expand the existing facilities. In addition, utility corridors are generally considered to be a compatible land use with agricultural land because the maintenance of underground pipelines and appurtenant facilities does not affect the continued use of the ground surface for agricultural uses. See Section 3.15, Land Use and Planning, for further discussion on existing zoning and land use designations in the program area.

Williamson Act contracts are intended to prevent conversion of agricultural land to non-agricultural uses. As described above, program facilities are considered a compatible land use with Williamson Act lands because presence of underground pipelines and appurtenances would not affect the use of the land for agricultural purposes.

Program tasks would not conflict with existing zoning for agricultural use or Williamson Act contracts. The impact would be **less than significant**.

Significance Determination
Less than significant

Mitigation
No mitigation would be required for Impact AG-2.

Impact AG-3: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use (less than significant)

As described under Impact AG-1 and Impact AG-2, program impacts on lands used for agricultural purposes would be short-term and temporary. The program would not have other direct or indirect impacts that would convert farmland to non-agricultural use. The program would not expand Valley Water's conveyance or system capacity, and thus would not generate unplanned growth that could result in additional development, including conversion of agricultural land. Therefore, the program would not involve changes that could result in the conversion of farmland to non-agricultural use. The impact would be **less than significant**.

Significance Determination
Less than significant

Mitigation
No mitigation would be required for Impact AG-3.

4 Other CEQA Considerations

4.1 Introduction

In addition to identifying the effects of the Proposed Project and measures to mitigate significant effects (Chapter 3, Environmental Setting and Impact Analysis), and project alternatives and their effects (Chapter 4, Alternatives), the CEQA Guidelines list the following other topics:

- significant irreversible environmental changes [CEQA Guidelines Section 15126.2(d)]
- significant and unavoidable impacts [CEQA Guidelines Section 15126.2(c)]
- growth-inducing impacts [CEQA Guidelines Section 15126.2(e)]
- cumulative impacts [CEQA Guidelines Section 15130].

4.2 Irreversible Impacts

Section 15126.2(d) of the CEQA Guidelines requires that an EIR must identify any irreversible impacts (also referred to as irreversible environmental changes) that would be caused by a project if it is implemented. Irretrievable commitments of resources should be evaluated to ensure that current consumption is justified. Examples noted by the CEQA Guidelines include:

- Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely.
- Primary impacts and, particularly, secondary impacts (such as a highway improvement that provides access to a previously inaccessible area) that generally commit future generations to similar uses.
- Irreversible damage from environmental accidents associated with the project.

4.2.1 Use of Nonrenewable Resources

The proposed PMP update would require a permanent commitment of nonrenewable resources resulting from the direct consumption of fossil fuels. The PMP activities would involve vehicle and equipment use for worker travel, equipment transport, and equipment operation, which use nonrenewable fossil fuels. Fuel consumption to implement the PMP is not considered wasteful given the positive outcome of the work to maintain the water distribution system. Vehicle engines and fuel used during implementation of the PMP would comply with energy reduction and efficiency requirements at the state and local level. This includes In-Use Off-Road Diesel-Fueled Fleets Regulation that establishes idling restrictions, limitations on buying and

selling older off-road diesel vehicles, reporting requirements, and retrofit and replacement requirements. Additionally, Valley Water's Climate Change Action Plan includes adding electric and fuel-efficient vehicles to the fleet and complying with the existing off-road diesel engine idling policy. Implementation of the PMP would, therefore, efficiently use nonrenewable energy resources.

4.2.2 Changes in Land Use which would Commit Future Generations

The proposed PMP update does not involve a change in land use that would commit future generations to a similar use. The activities within the PMP area are meant to continue operation and maintenance of Valley Water's existing distribution system. No changes to land use in the PMP area are proposed.

4.2.3 Environmental Accidents

Accidental Release of Hazardous Materials

As discussed in Section 3.4, Hazards and Hazardous Materials, the proposed PMP update would involve limited quantities of miscellaneous hazardous substances, such as fuels and oils to run and maintain vehicles and other mechanized equipment. The PMP would also involve use of herbicides. Workers handling hazardous materials would adhere to WPS, OSHA, and Cal/OSHA health and safety requirements. Additionally, hazardous materials would be used and stored in accordance with Valley Water's BMPs and AMMs, which would ensure that hazardous materials are properly handled and stored, and that any accidental releases of hazardous materials would be properly controlled and quickly cleaned up. AMM HAZ-7 would also ensure that any excavation at known contaminated sites would be conducted in accordance with proper health and safety procedures. Valley Water also implements district-wide policies which would require proper herbicide application and minimize the potential for spills and leaks. A spill or leak of hazardous materials during PMP implementation would not occur in a great enough quantity to result in irreversible environmental damage.

4.3 Significant Unavoidable Impacts

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss significant effects, including those that can be mitigated but not reduced to a level of insignificance. For this analysis, the following significant and unavoidable impact would occur as a result of the proposed PMP update.

Noise

- **Impact NOI-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.** As further discussed in Section 3.11, Noise, even with the implementation of MM NOI-1 (Construction Noise Notification) and MM NOI-2 (Nighttime/Weekend Noise Control and Notification), it may be

necessary to carry out construction during times prohibited by local noise ordinance. Therefore, Impact NOI-1 remains significant and unavoidable.

4.4 Growth-Inducing Impacts

Section 15126.2(e) of the CEQA Guidelines requires preparers of an EIR to consider the growth-inducing impacts of a proposed project. Section 15126.2(e) states that the EIR should:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth.

Growth inducement itself is not an environmental effect but has the potential to lead to environmental effects. These environmental effects may include increased demand on other community and public services and infrastructure. A project can have the potential to induce direct and/or indirect growth.

A project would directly induce growth by resulting in construction of new housing. Direct forms of growth have secondary effects of expanding the size of local markets and attracting additional economic activity to the area. For example, a project would indirectly induce growth by resulting in:

- Substantial new permanent employment opportunities (e.g., commercial or industrial);
- A construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or
- Removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

The PMP would not involve the construction of housing and would therefore not directly induce population growth. The PMP would continue the inspection, maintenance, rehabilitation and/or repair of existing facilities under Valley Water's existing commitments. No new water distribution facilities or increases Valley Water conveyance capacity are proposed as part of the updated PMP, therefore PMP activities would not cause unplanned growth or associated impacts. The maintenance labor would be sourced from the existing Valley Water staff that has completed work under the existing PMP; therefore, the updated PMP would not result in increased demands for housing for construction labor or for community services and facilities. Implementation of the PMP would not have any direct or indirect growth inducing impacts.

4.5 Approach to Cumulative Impact Analysis

Section 15130 of the CEQA Guidelines requires that EIRs include a discussion of cumulative impacts. Cumulative impacts are two or more individual effects which, when considered together, are considerable or compound or increase other environmental impacts (CEQA Guidelines Section 15355). The individual effects can be changes resulting from a single project or a number of separate projects. The cumulative effect from several projects is the change in the environment that results from the incremental impact of the project when added to other reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Two methods can be used for cumulative impact analysis (CEQA Guidelines Section 15130). In the list approach, the lead agency identifies related projects or activities that could add to the proposed project's environmental impacts. In the projection, or plan, approach, the lead agency relies on projections in an adopted planning document (for example, a General Plan EIR) or prior environmental document. This PEIR uses the plan approach given the long duration of the PMP (15 years or longer) and the large geographic area covered PMP. Information about future planned development and projections were obtained from the following city and county General Plans:

- Santa Clara County
- San Benito County
- City of Campbell
- City of Cupertino
- City of Gilroy
- City of Los Altos
- City of Milpitas
- City of Morgan Hill
- City of Mountain View
- City of San Jose
- City of Santa Clara
- City of Saratoga
- City of Sunnyvale
- Town of Los Altos

The discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of project-specific impacts (CEQA Guidelines section 15130(b)). The cumulative impact analysis for this PEIR evaluates the potential cumulative impacts from the proposed PMP in combination with other past, present, and probable future projects in or near the PMP area.

4.5.1 Methods Used in This Analysis

The potential for PMP-related impacts to cause or contribute to cumulative effects depends on the extent and scale of development projected in each of the general plans covering the PMP area. This EIR's cumulative analysis relies on the following approach:

- The geographic study area for the cumulative impact analysis is specific to each resource topic. The geographic study areas for the cumulative impact analysis encompasses the PMP area and the areas surrounding other relevant Valley Water and non-Valley Water projects and plans in Valley Water's service area for all resources.
- Information about future planned development and projections are provide in Table 4.5-1.
- Existing information was used to help determine whether a PMP-related impact could cause or contribute to a significant cumulative impact.

4.5.2 Plans Considered in the Cumulative Impact Analysis

Table 4.5-1 summarizes the scale of development projected in each of the general plans covering the PMP area. Links to the referenced plans are listed below:

- Santa Clara County General Plan, 1995-2010; Housing Element Update 2023-2031
- San Benito County 2035 General Plan; 2014–2023 Housing Element
- City of Campbell General Plan 2040
- Cupertino General Plan Community Vision 2015-2040
- City of Gilroy 2040 General Plan
- City of Los Altos General Plan; City of Los Altos 2023-2031 Housing Element Update
- City of Milpitas 2040 General Plan
- City of Morgan Hill 2035 General Plan
- Mountain View 2030 General Plan
- Envision San Jose 2040
- City of Santa Clara 2010 – 2035 General Plan
- City of Saratoga 2040 General Plan; 6th Cycle Housing Element Update
- Sunnyvale General Plan; Sunnyvale 2023-2031 Housing Element
- Town of Los Altos Hills General Plan Update 2007
- Santa Clara Valley Habitat Conservation Plan
- Water Supply Master Plan 2040
- Santa Clara Valley Urban Runoff Pollution Prevention Program

Table 4.5-1 Cumulative Projections

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
Santa Clara County General Plan, 1995-2010; Housing Element Update 2023-2031	The County's Regional Housing Needs Allocation (RHNA) is based on a model and assumptions about projected growth in housing need determined by the regional Council of Governments, in this case the Association of Bay Area Governments (ABAG). The RHNA assignment for the unincorporated areas of the county for the 2023-2031 planning period is 3,125 housing units, a dramatic increase from the 277 units allocated for the previous, 2015-2022 planning period. The General Plan contains a strategy for urban growth management articulated in this chapter recognizes the value of a growing, diversifying economy and population, but also the need to accommodate that growth without sacrificing overall quality of life.	**Significant Project Impacts** • Cultural resources (cultural and historical resources) - significant and unavoidable. • Geology (seismic activity) - significant and unavoidable. • Public Services (schools) - significant and unavoidable. • Transportation (VMT) - significant and unavoidable. **Significant Cumulative Impacts** • Air quality (criteria pollutants) - cumulatively considerable contribution to a significant and unavoidable effect. • Cultural resources (cultural and historical resources) - cumulatively considerable contribution to a significant and unavoidable effect. • Noise (construction noise) - cumulatively considerable contribution to a significant and unavoidable effect. • Transportation (VMT) - cumulatively considerable contribution to a significant and unavoidable effect.
San Benito County 2035 General Plan; 2014–2023 Housing Element	According to the 2014-2023 Housing Element, San Benito County is viewed to reach a 2035 population of 81,332, growing 1.6 percent annually to a level 47 percent greater than in 2010; to have 25,057 housing units, 1.4- percent annual growth leading to a 40-percent rise; and 19,546 jobs, 0.8-percent growth each year for a 20.7-percent overall increase. Looking separately at the unincorporated area of San Benito County in 2035, however, the projection suggests population would grow 2.5 percent annually to 83 percent over 2010 and housing would increase 2.2 percent each year to 72 percent, notably higher than for the San Benito County as a whole, while employment would rise less, 0.5 percent annually to 13 percent. Utility service providers are important to support the expansion of the county's economic base, serve new development, and	**Significant Project Impacts** • Aesthetics and visual resources (light and glare) - significant and unavoidable. • Agricultural resources (conversion of agricultural land) - significant and unavoidable. • Air quality (conflict air quality plan) - significant and unavoidable. • Biological resources (special status species, riparian habitats, and conflict with local policies and ordinances) - significant and unavoidable. • Cultural resources (undiscovered historic and cultural resources) - significant and unavoidable. • Global climate change (GHG emissions) - significant and unavoidable.

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
	maintain and increase infrastructure capacity. Utility infrastructure typically includes facilities that provide energy (e.g., electricity and natural gas lines) to residential, commercial, and institutional users. Adequate right-of way is a fundamental requirement for all utilities. Land acquisition requirements can be significant to ensure that there is enough capacity and available connections to serve existing and future development. A well-maintained facility is also critical to ensure the safety residents and businesses located near utilities (e.g., gas lines).	• Hydrology and water resources (flooding) - significant and unavoidable. • Noise (exceedance of noise thresholds and traffic noise) - significant and unavoidable. • Population and housing (increase population) - significant and unavoidable. • Transportation (conflict with applicable plan) - significant and unavoidable. **Significant Cumulative Impacts** • Aesthetics and visual resources (visual quality) - cumulatively considerable contribution to a significant cumulative effect. • Agricultural resources (conversion of agricultural land) - cumulatively considerable contribution to a significant and unavoidable effect. • Biological resources (special status species and habitats) - cumulatively considerable contribution to a significant cumulative effect. • Cultural resources (undiscovered historic and cultural resources) - cumulatively considerable contribution to a significant cumulative effect. • GHG (emissions) - cumulatively considerable contribution to a significant cumulative effect. • Transportation (LOS) - cumulatively considerable contribution to a significant and unavoidable effect. • Hydrology and water quality (water quality, runoff, and flooding) - cumulatively considerable contribution to a significant cumulative effect. • Noise (traffic noise) - cumulatively considerable contribution to a significant cumulative effect. • Population (induced growth) - cumulatively considerable contribution to a significant cumulative effect.

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
City of Campbell General Plan 2040	The City of Campbell General Plan identifies the community's vision for the future and provides a framework that will guide decisions on growth and development. The General Plan identifies future public facilities and infrastructure needs to ensure existing residents and businesses continue to receive adequate services and new developments have the necessary facilities and infrastructure to support long-term viability. City-owned public facilities and properties are shown on Figure CSF-1. The Community Services and Facilities Element outlines the current and future infrastructure and public services needs of the city. This element works collaboratively with the topics addressed in the General Plan Elements, including the Land Use, Safety, Conservation and Open Space, and Community Health and Wellness Elements.	**Significant Project Impacts** • Air quality (criteria pollutants) - significant and unavoidable. • Greenhouse gases, climate change, and energy - significant and unavoidable. • Transportation and circulation (VMT and LOS) - significant and unavoidable. **Significant Cumulative Impacts** • Greenhouse gases, climate change, and energy - cumulatively considerable contribution to a significant and unavoidable effect. • Transportation and circulation (LOS) - cumulatively considerable contribution to a significant and unavoidable effect.
Cupertino General Plan Community Vision 2015-2040	Between 2010 and 2040, Cupertino's population is expected to grow by 12,898 residents - from 58,302 to 71,200. This translates into an increase of 22 percent over 30 years. ABAG projects both Santa Clara County and the ABAG region will experience much larger growth over the same time period (36 percent and 31 percent, respectively). Cupertino's job growth is expected to continue to outpace population and household growth between 2010 and 2020, compounding the "jobs rich" nature of the City and the region. By 2020, Cupertino is anticipated to have a jobs-to-housing ratio of 1.40 (up from 1.29 in 2010, but mirroring the regional average of 1.40). Job growth in Cupertino is projected to level off after 2020 to a comparable pace with population and household growth.	**Significant Project Impacts** • None **Significant Cumulative Impacts** • None
City of Gilroy 2040 General Plan	In 2016, the people of the City of Gilroy approved an Urban Growth Boundary (UGB) by initiative to protect the unique character of the City of Gilroy and the agriculture and open space character of the surrounding areas. The UGB indicates the extent and direction of the city's future urban expansion and capital	**Significant Project Impacts** • Air quality (criteria pollutants) - significant and unavoidable. • Greenhouse gases (GHG emissions and conflict with an applicable plan, policy, or regulation for reducing GHG emissions) - significant and unavoidable.

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
	improvements planning. The UGB is a line beyond which urban development is not allowed, except for public parks, public educational facilities (such as public schools and public colleges), and public wastewater, sewer, storm drain, and water recycling facilities. The policies implementing the UGB allow sufficient flexibility within its limits to respond to the City's changing needs over time. The UGB complements General Plan policies encouraging infill development and supporting a thriving downtown center.	• Transportation (VMT) - significant and unavoidable. **Significant Cumulative Impacts** • Agriculture (conversion of Important Farmland to nonagricultural use) - cumulatively considerable contribution to a significant and unavoidable effect. • Air quality (criteria pollutants) - cumulatively considerable contribution to a significant and unavoidable effect. • Greenhouse gases (conflict with an applicable plan, policy, or regulation for reducing GHG emissions) - cumulatively considerable contribution to a significant and unavoidable effect. • Transportation (VMT) - cumulatively considerable contribution to a significant and unavoidable effect.
City of Los Altos General Plan; City of Los Altos 2023-2031 Housing Element Update	The latest housing element estimated that the total population of the city in 2031 would be 36,108 (31,526 current population + 4,582 new residents), or a population increase of approximately 14.5%. In addition, the total housing of units in Los Altos would be an estimated 13,489 (11,841 current housing units + 1,648 units), or a housing increase of approximately 13.9 percent. The housing element was found to be consistent with State requirements for the RHNA and would be within the growth forecasts for Northwest Santa Clara County in Plan Bay Area 2050, which projects a 38 percent increase in housing for Northwest Santa Clara County.	**Significant Project Impacts** • No significant project impacts. **Significant Cumulative Impacts** • No significant cumulative impacts.
City of Milpitas 2040 General Plan	In 1998, voters in the City of Milpitas established an Urban Growth Boundary limiting development in its eastern hill areas. The initiative was set to expire in 2018, but was extended through the passage of Measure I by Milpitas voters in November 2016. The City owns, operates and maintains a potable water distribution system. The City purchases treated potable water	**Significant Project Impacts** • Noise (traffic noise) - significant and unavoidable. • Transportation (VMT) - significant and unavoidable. **Significant Cumulative Impacts** • Noise (traffic noise) - cumulatively considerable contribution to a significant and unavoidable effect.

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
	from two wholesalers, the San Francisco Public Utilities Commission (SFPUC) and the SCVWD.	• Transportation (VMT) - cumulatively considerable contribution to a significant and unavoidable effect.
City of Morgan Hill 2035 General Plan	The City of Morgan Hill pumps groundwater from the Coyote and Llagas Subbasins for its water supply. SCVWD manages all groundwater basins in Santa Clara County and utilizes a Groundwater Recharge Program to maintain groundwater levels. According to Morgan Hill's 2010 Urban Water Management Plan, the groundwater basins are not in condition of overdraft, and groundwater levels are not expected to drop. The Urban Service Area refers to the area within the Urban Growth Boundary where utilities, such as gas, water, sewer, and electricity, and public services, such as police, fire, schools, and parks and recreation, are and will be provided by the City or other service provider agencies. The extension of urban services beyond the Urban Service Area is not allowed, except in the event that 1) the City has entered into a mutual aid or reciprocal emergency agreement for police, fire, or other emergency services to be provided by the City on County land; or 2) the extension is to address the failure of an existing septic system or well that would have a direct adverse impact on public health and safety without the expansion of the service.	**Significant Project Impacts** • Agriculture and forestry resources (conversion of Important Farmland to nonagricultural use, Williamson Act) - significant and unavoidable. • Air quality (criteria pollutants) - significant and unavoidable. • GHG emissions (substantial increase in GHG) - significant and unavoidable. • Noise (ambient and cumulative noise) - significant and unavoidable. • Transportation (LOS) - significant and unavoidable. **Significant Cumulative Impacts** • Agriculture and forestry resources (conversion of Important Farmland to nonagricultural use, Williamson Act) - cumulatively considerable contribution to a significant and unavoidable effect. • Air quality (criteria pollutants) - cumulatively considerable contribution to a significant and unavoidable effect. • GHG emissions (substantial increase in GHG) - cumulatively considerable contribution to a significant and unavoidable effect. • Transportation (LOS) - cumulatively considerable contribution to a significant and unavoidable effect.
Mountain View 2030 General Plan	The City anticipates change by projecting the growth of population, housing and jobs through 2030 (see Table 3.1 of the General Plan). It bases projections on General Plan land uses and intensities and economic assumptions. The General Plan estimates the city's population to increase by 40,000 residents between 2010 and 2030. The Plan uses a broad range of policies,	**Significant Project Impacts** • Air quality (criteria pollutants) - significant and unavoidable. • Noise (traffic noise) - significant and unavoidable. • Transportation (VMT and LOS) - significant and unavoidable. **Cumulative Impacts**

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
	programs and services to meet the needs of the City's future population. Mountain View maintains a diverse water supply portfolio to minimize the effects on customers during drought, natural disaster and operational shutdowns. Potable supplies include a combination of locally pumped groundwater and purchased water from the San Francisco Public Utilities Commission and the Santa Clara Valley Water District. Water infrastructure functions well during normal use, although minor upgrades are necessary for periods of high demand and to provide additional firefighting capacity. In addition to the city's potable water supply, there is a recycled water system in the city's North Bayshore Change Area. The city estimates that recycled water will be used for irrigation and will offset up to 10% of citywide potable water use by 2030.	• Air quality (criteria pollutants) - cumulatively considerable contribution to a significant and unavoidable effect. • Noise (traffic noise) - cumulatively considerable contribution to a significant and unavoidable effect. • Transportation (VMT and LOS) - cumulatively considerable contribution to a significant and unavoidable effect.
Envision San Jose 2040	The General Plan expects the city to continue to grow by 751,000 jobs and 430,000 dwelling units in total in 2040, supporting a residential population of approximately 1.3 million people and a Jobs / Employed Resident Ratio (J/ER) of 1.1/1. Planning for a large and growing city necessitates careful consideration of a wide variety of environmental issues, including water supply, air quality, greenhouse gas emissions and the protection of natural resources. A key strategy of the Envision General Plan is to focus new growth capacity in specifically identified "Growth Areas," while the majority of the city is not planned for additional growth or intensification. This approach reflects the Urban Growth Boundary, the built-out nature of San José therein, the limited availability of additional "infill" development sites compatible with established neighborhood character, and the emphasis in the General Plan's vision and goals upon reducing environmental impacts while fostering transit use and walkability. This local water system is supplemented by the importation of water from external sources. Water is imported to Santa Clara County by the SCVWD from state and federal water systems that	**Significant Project Impacts** • Aesthetics (visual character) - significant and unavoidable. • Agriculture and forestry resources (conversion of agriculture land) - significant and unavoidable. • Air quality (criteria air pollutants) - significant and unavoidable. • Biological resources (special status species and habitats) - significant and unavoidable. • GHG (increase in GHG emissions) – significant and unavoidable. • Transportation (LOS and alternative transportation) - significant and unavoidable. • Noise (vehicle noise) - significant and unavoidable. • Population and Housing (increase population) - significant and unavoidable. **Significant Cumulative Impacts** • Agriculture and forestry resources (conversion of agriculture land) - cumulatively considerable contribution to a significant and unavoidable effect.

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
	flow through the Sacramento-San Joaquin Delta, and by the San Francisco Public Utilities Commission (SFPUC) from the Sierra Nevada mountain range.	• Air quality (criteria air pollutants) - cumulatively considerable contribution to a significant and unavoidable effect. • Biological resources (special status species and habitats) - cumulatively considerable contribution to a significant and unavoidable effect. • GHG (increase in GHG emissions) – cumulatively considerable • Transportation (LOS and alternative transportation) - cumulatively considerable contribution to a significant and unavoidable effect. • Noise (vehicle and airport noise) - cumulatively considerable contribution to a significant and unavoidable effect. • Population and Housing (increase population) - cumulatively considerable contribution to a significant and unavoidable effect.
City of Santa Clara 2010 – 2035 General Plan	ABAG projects that the County of Santa Clara will grow by 512,900 (27%) in population and 427,480 (46%) in new employment between 2010 and 2035. ABAG projects that the City of Santa Clara will accommodate nearly six percent of this new population, resulting in 28,300 new residents. According to ABAG, job growth in the City is expected to grow just as quickly, matching that of the County, with 48,690 new jobs (45% growth). The City of Santa Clara receives its potable water supply from a combination of the City of San Francisco's Hetch-Hetchy aqueduct system, the Santa Clara Valley Water District, and groundwater from City-owned wells. Groundwater contributes almost 70 percent of the City's supply. Santa Clara also uses recycled wastewater for certain landscape irrigation, industrial and construction purposes. The City's 2005 Urban Water Master Plan (UWMP) projects that with conservation programs in place, demand for water in 2030 will be approximately 36,337 acre feet (af). The UWMP is updated every five years and projects water	**Significant Project Impacts** • Population and Housing (increased population) - significant and unavoidable. • Traffic and circulation (LOS) - significant and unavoidable. • Climate change (GHG emissions) - significant and unavoidable. • Public utilities (inadequate landfill capacity) - significant and unavoidable. • Noise (traffic noise) - significant and unavoidable. **Significant Cumulative Impacts** • Traffic and circulation (LOS) - cumulatively considerable contribution to a significant and unavoidable effect. • Climate change (GHG emissions) - cumulatively considerable contribution to a significant and unavoidable effect. • Public utilities (inadequate landfill capacity) - cumulatively considerable contribution to a significant and unavoidable effect.

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
	demand over a 25-year horizon. The 2010 update will include demand projections for 2035.	• Noise (traffic noise) - cumulatively considerable contribution to a significant and unavoidable effect.
City of Saratoga 2040 General Plan; 6th Cycle Housing Element Update	Saratoga is located in the West Santa Clara County superdistrict (Superdistrict No. 10) used by ABAG for sub-regional growth projections, as presented in Plan Bay Area 2050. The number of households in this superdistrict is projected to grow by 42 percent between 2015 and 2050, from 121,000 households to 172,000 households, representing 4 percent of growth in the San Francisco Bay region.	**Significant Project Impacts** • Agriculture and forestry resources (conversion of agriculture lands) - significant and unavoidable. • Transportation (VMT) - significant and unavoidable. **Significant Cumulative Impacts** • Agriculture and forestry resources (conversion of agriculture lands) - cumulatively considerable contribution to a significant and unavoidable effect. • Transportation (VMT) - cumulatively considerable contribution to a significant and unavoidable effect.
Sunnyvale General Plan; Sunnyvale 2023-2031 Housing Element	Since 2000, the population in Sunnyvale has increased by 15.8 percent; this rate is above that of the whole region, at 12.9 percent. Sunnyvale had an estimated population of 156,503 people in 2020, which accounts for 8 percent of the population in Santa Clara County (see Table 3-1 in the Sunnyvale 2023-2031 Housing Element). Sunnyvale is the second largest city in Santa Clara County behind San Jose, which far exceeds Sunnyvale in both population and area. According to ABAG, Santa Clara County is projected to increase by 22 percent (or 551,980 people) between 2020 and 2040. Sunnyvale is expected to add about 72,000 new residents by 2040, representing the largest percent change in population of any city in the county (33 percent).	**Significant Project Impacts** • Air quality (criteria pollutants) - significant and unavoidable. • Cultura resources (historic resources) - significant and unavoidable. • Traffic (LOS) - significant and unavoidable. • Noise (traffic noise) - significant and unavoidable. **Significant Cumulative Impacts** • Air quality (criteria pollutants) - cumulatively considerable contribution to a significant and unavoidable effect. • Cultura resources (historic resources) - cumulatively considerable contribution to a significant and unavoidable effect. • Traffic (LOS) - cumulatively considerable contribution to a significant and unavoidable effect. • Noise (traffic noise) - cumulatively considerable contribution to a significant and unavoidable effect.

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
Town of Los Altos Hills General Plan Update 2007	ABAG forecasts that the Town of Los Altos population within its corporate limits will increase from 8,500 in 2005 to 9,400 in 2035. The number of households is predicted to increase from 2,960 in 2005 to 3,300 in 2035 based on an average household size of 2.8 persons. The Town's drinking water is provided by two water suppliers: Purissima Hills Water District and the California Water Service Company (Cal Water). Cal Water obtains the water supplied to Los Altos Hills from the Santa Clara Valley Water District via pipelines from the Santa Clara Valley Water District's Rincoñada treatment plant and from company-owned wells. During the dry season, the plant and pipelines are at capacity.	**Significant Project Impacts** • None **Significant Cumulative Impacts** • None
Santa Clara Valley Habitat Conservation Plan	The Santa Clara Valley Habitat Conservation Plan (HCP) is a regional partnership between six Local Partners (County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, and the Cities of San Jose, Gilroy, and Morgan Hill) and two Wildlife Agencies (CDFW and USFWS), in order to protect special-status species. The HCP provides a framework for promoting the protection and recovery of natural resources, including endangered species, as well as aims to streamline the permitting process for planned development, infrastructure, and maintenance activities under the jurisdictions of the County of Santa Clara (County), the Santa Clara Valley Water District (SCVWD), the Santa Clara Valley Transportation Authority (VTA) and the Cities of Gilroy, Morgan Hill, and San José.	No significant and unavoidable impacts. The HCP is beneficial and would have a less than cumulatively considerable contribution to potentially significant cumulative effects.
Water Supply Master Plan 2040	The Water Supply Master Plan (WSMP) is Valley Water's guiding document for long-term water supply investments to ensure water supply reliability for the County. Updated about every five years, this long-range plan assesses future county-wide demands and evaluates and recommends water supply and infrastructure projects to meet those demands to achieve Valley	N/A

Plan Name	Summary Projections in Plan	Significant Impacts Identified in EIR Prepared for Local General Plan
	Water's level of service (LOS) goal through the planning horizon. Valley Water's LOS goal is to "Meet 100 percent of annual water demand during non-drought years and at least 80 percent demand in drought years." The most recent plan, Water Supply Master Plan 2040, was adopted by the Valley Water Board of Directors (Board) in 2019. Valley Water has started a two-year process to develop the Water Supply Master Plan 2050, which extends the planning horizon to 2050.	
Santa Clara Valley Urban Runoff Pollution Prevention Program	Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) is an association of fifteen regional cities and towns whose participating members are required to implement the stormwater pollution management measures outlined in the Santa Clara Valley Urban Runoff Management Plan to control the quality of their stormwater discharge.	N/A

4.6 Cumulative Impact Analyses

This section summarizes the cumulative impact analysis by resource topic. The PMP would have no impacts on land use and planning and would therefore not contribute to cumulative impacts on land use and planning. Land use and planning impacts are not discussed further.

4.6.1 Hydrology and Water Quality

Cumulative Impacts

As noted in Table 4.5-1, the San Benito County 2035 General Plan EIR determined that implementation of the San Benito County 2035 General Plan would result in project and cumulative impacts to hydrology and water resources. Specifically, the 2035 General Plan would result in cumulative impacts related to water runoff and flooding from dam failure. None of the other plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to hydrology and water quality.

Water Quality, Erosion, and Sedimentation

As noted in Table 4.5-1, the San Benito County 2035 General Plan would result in a significant cumulative water quality impact. Specifically, it was determined that implementation of the 2035 General Plan and development in the region have the potential to alter local drainage and runoff. Although compliance with Regional Water Quality Control Board regulations, such as applicable NPDES permits and associated BMPs, would minimize discharge of contaminated surface water from development, a significant cumulative water quality impact would still occur.

The proposed project would not add impervious surface area to sub-watersheds or otherwise create permanent conditions that would increase peak stormwater runoff rates in receiving waters on an ongoing basis. However, as discussed in Section 3.1, the proposed project would cause temporary increases in the rate and volume of runoff in receiving waters in the program area. The proposed project would implement AMM HYD-11 which ensures that program activities would not release water to natural water bodies that are approaching flood stage. The proposed project would implement AMM HYD-2 which requires Valley Water to obtain storm drain capacity information and maintain releases below the conveyance capacity. Implementation of these AMMs as part of the program would avoid the potential for runoff water to exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Conclusion

The San Benito County 2035 General Plan EIR determined that a significant and unavoidable cumulative impact on water quality, erosion, and sedimentation would occur because the County cannot ensure all development would adhere to regulations. The proposed project would comply with federal and state regulations, including NPDES requirements, which would minimize discharge of contaminated surface water. The project would also implement AMMs to

further limit runoff and ensure the stormwater drainage system is not exceeded. With compliance with regulations and implementation of AMMs, the PMP's incremental impact on water quality, erosion, and sedimentation would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative water quality impact would **not be cumulatively considerable**.

Groundwater
As shown in Table 4.5-1, none of the plans were found to result in significant project or cumulative impacts related to groundwater.

Valley Water is required to manage both surface water and groundwater quality to various standards set by the State and federal regulation. Valley Water is also required to maintain stream water quality such that use of surface water for groundwater recharge would not impact the quality of groundwater resources. As discussed in Section 3.1, the proposed project would also not create demand for groundwater supplies. The program BMPs and AMMs described above for surface water would also reduce indirect impacts to groundwater quality. Furthermore, the stormwater treatment-related BMPs and AMMs discussed above would meet water quality treatment standards as required under Provision C.3 of the Regional Municipal NPDES Permit, relevant basin plans, and the Valley Water Groundwater Management Plan. The cumulative impact from the project and cumulative growth projections on groundwater would be less than significant.

Conclusion
Compliance with local and State design standards and regulations would ensure the long-term sustainability of groundwater supplies and the cumulative impact on groundwater resources would be **less than significant**.

Drainage and Flooding
Future development under the San Benito County 2035 General Plan would result in an increase in the number of persons and property potentially at risk from flooding, including flooding that is due to a rare catastrophic failure of a levee or dam or other causes. Several dams and reservoirs operated to provide water storage for irrigation and domestic uses, as well as flood control during seasonal periods of runoff, could fail and inundate portions of the County under a rare catastrophic event such as a large earthquake. Dams within and around the County that pose risks to people and property resulting from dam inundation are owned and/or operated by other agencies, and seismic activity in the region could cause dam failure, even for dams that have been inspected and maintained. Since the San Benito County General Plan impacts on flooding are significant and unavoidable, the cumulative impact of projected development is assumed to be significant.

Valley Water implements standard practices and procedures for water releases, includes slowly ramping up flows so the on-site monitors can preemptively identify and resolve issues with releases, including flooding. For program activities requiring water releases, Valley Water

would prevent the potential for flooding by implementing AMM HYD-4, which requires consideration of a release reduction protocol (such as performing maintenance in half-full pipes) whenever possible. In addition, AMM HYD-6 requires releases to be contained within temporary spillways that contain flow from the release point to the receiving waterway and water not be allowed to flow directly over erodible soil. AMM HYD-9 and AMM HYD-10 would require monitoring during releases to reduce the potential for high flows. Furthermore, AMM HYD-11 would prevent releases to natural water bodies that are approaching flood stage. As discussed in Section 3.1, implementation of Valley Water's standard water release procedures and program-specific AMMs would ensure the program's potential to result in on- or off-site flooding would be less than significant.

Conclusion

The San Benito County 2035 General Plan determined that the program could not completely eliminate risks from dam failure, resulting in a significant and unavoidable impact and thus a significant cumulative impact on flooding. The project would implement AMMs to prevent releases to natural water bodies that are approaching flood stage. With compliance with regulations and implementation of AMMs, the PMP's incremental impact on drainage and flooding would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative draining and flooding impact would **not be cumulatively considerable**.

4.6.2 Geology and Soils

Cumulative Impacts

As noted in Table 4.5-1, the Santa Clara County General Plan EIR determined that implementation of the Santa Clara County General Plan would result in significant and unavoidable impacts on geology and soils related to seismic activity. None of the other plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to geology and soils.

Substantial Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault

As noted in Table 4.5-1, the Santa Clara County General Plan EIR determined that implementation of the Santa Clara County General Plan would result in significant and unavoidable project impacts related to seismic activity. Although the County policies would be adequate to protect lives and property and the County's emergency preparedness and response plan would mitigate effects of a major earthquake in the unincorporated area, substantial property damage and loss of life could occur in a major earthquake regardless of the policies and regulations adopted by the County. Thus, it was determined implementation of the Santa Clara County General Plan would result in significant and unavoidable impacts.

As discussed in Section 3.2, program activities would be limited to maintenance at or along existing infrastructure and would not involve excavation, earthmoving, grading, or import or export of materials at a scale that would result in changes to geologic or soil conditions at

program work sites. As part of the updated PMP, Valley Water would also implement AMM GEO-1, which would ensure that access roads used for the program would be stable and would not generate erosion or landslides which would further reduce the potential for geologic and soil effects related to seismicity, including rupture along faults, seismic ground-shaking, seismic-related ground failure, liquefaction, and landslides. Implementation of program activities would not cause an increased risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground-shaking, or seismic-related ground failure, including liquefaction and landslides. The impact would be less than significant.

Conclusion
While the cumulative impact on seismicity from implementation of the planned projects in Santa Clara County would be significant, when added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative impact would **not be cumulatively considerable**.

Result in Substantial Soil Erosion or the Loss of Topsoil
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to soil erosion or loss of topsoil. As discussed in Section 3.2, program-related ground disturbance would not result in substantial soil erosion or loss of topsoil. The cumulative impact on soils erosion and loss of topsoil would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on soil erosion and loss of topsoil would be less than significant.

Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse.
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to landslides, lateral spreading, subsidence, liquefaction, or collapse. As discussed in Section 3.2, program activities would be limited to inspection, repair, and maintenance of existing infrastructure. Implementation of AMM GEO-1 would further reduce the risk of landslides. The cumulative impact would be less than significant.

Conclusion
The cumulative impact on landslide, lateral spreading, subsidence, liquefaction, and collapse from the proposed project and cumulative growth projections would be less than significant.

Expansive Soils
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to expansive soils. As discussed in Section 3.2, program activities would maintain existing infrastructure and would not have the potential to exacerbate existing unstable geologic or soil units, or to cause units to become unstable because of the program activities. The potential risk to life and property from program activities on unstable or expansive soils would be low. The cumulative impact on expansive soils would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on expansive soils would be less than significant.

Septic Tanks or Alternative Wastewater Disposal Systems
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to septic tanks or alternative wastewater disposal systems. No septic tanks or alternative wastewater disposal system would be installed as part of the program activities. Any need for sanitary services during program activities would be provided by portable toilets or existing facilities. No impact would occur.

Conclusion
The cumulative impact from the project and cumulative growth projections on septic tanks or alternative wastewater disposal systems would be less than significant.

Destroy or Substantially Damage a Unique Paleontological Resource or a Unique Geologic Feature
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to paleontological resources.

As discussed in Section 3.2, most of the program work is not expected to involve disturbance of previously undisturbed substrate materials, and thus the work would be unlikely to result in adverse effects on paleontological resources, even if the surrounding area has a high paleontological potential. However, if any program activities would require disturbance to previously undisturbed substrate materials (e.g., repairs that would require disturbance outside the original disturbance prism) with high or undetermined paleontological potential, these activities would have the potential to destroy unique paleontological resources. Valley Water would implement MM GEO-1 through MM GEO-5 to reduce the potential impacts to less than significant.

Conclusion
The PMP's incremental impact on paleontological resources would be reduced through implementation of MM GEO-1 through MM GEO-5. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable with implementation of project mitigation measures**.

4.6.3 Biological Resources

Cumulative Impact
As noted in Table 4.5 1, the San Benito County 2035 General Plan EIR and Envision San Jose 2040 EIR determined that implementation of the General Plans would result in significant impacts on biological resources. Specifically, implementation of the General Plans would result in significant impacts to special status species, riparian habitats, and conflict with local policies and ordinances. None of the other plans listed in Table 4.5-1 were found to have significant impacts related to biological resources.

Direct or Indirect Impacts on Candidate, Sensitive, or Special Status Species in Local or Regional Plans, Policies, or Regulations

Potential direct impacts of the San Benito County 2035 General Plan and Envision San Jose 2040 would include removal of habitat for new development and infrastructure. New development and infrastructure in previously undeveloped areas would have the potential to result in the removal of habitats that support sensitive species and the loss of individuals of special status plant and wildlife species. Depending on location and density, some proposed land uses could result in greater biological impacts than others due to increased development densities. Future development of 2035 General Plan land uses outside of federal and state-owned parks would have the potential to result in direct impacts to designated critical habitat.

While the San Benito County 2035 General Plan and Envision San Jose 2040 include goals and policies for the protection of sensitive biological resources that would reduce on protected species and natural communities, the counties do not have a site-specific approach to address all impacts of development to special-status species and their habitats as the general plans are not designed to facilitate individual development projects but rather set forth the County's overall land use vision and framework for development through the General Plan horizon year. Implementation of mitigation measures identified in the EIRs would only partially offset impacts of biological resources associated with urban or rural development and the cumulative impact would be significant.

Special-Status Plants

As discussed in Section 3.3, a number of special-status plant species are known to be present or could potentially occur in the program area. Program impacts within natural areas, including areas potentially supporting special status plants, would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach to maintenance activities. Implementation of Valley Water BMPs, general program AMMs, and mitigation measures would further reduce impacts on special status plants. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable with implementation of mitigation**.

Special-Status Invertebrates

As discussed in Section 3.3, the monarch butterfly, Crotch's bumble bee, and Bay checkerspot butterfly are present in the program area vicinity. Implementation of Valley Water general program AMMs and AMM-BIO-1 to determine whether a particular activity would potentially result in impacts on special-status invertebrates as well as whether monarch butterflies or Crotch's bumble bees could occur in a given activity area, the implementation of Mitigation Measures BIO-5 and BIO-6 (for Crotch's bumble bees) and BIO-7 and BIO-8 (for monarch butterflies) would reduce these impacts. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable with implementation of mitigation**.

Special-Status Fish and Essential Fish Habitat

As discussed in Section 3.3, the Central California Coast steelhead, South-Central California Coast steelhead, Central Valley fall-run Chinook salmon, Pacific lamprey, riffle sculpin, Sacramento hitch, Monterey hitch, and southern coastal roach are present in streams in the program area. Program impacts within streams potentially supporting special-status fish, and in EFH, would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach to maintenance activities. Nevertheless, program activities may impact special-status fish and EFH through direct or indirect disturbance of individuals and populations as well as disturbance, modification, or destruction of suitable habitat.

Implementation of Valley Water BMPs would reduce impacts on special-status fish species, their habitat, and EFH, and compliance with VHP conditions would further reduce impacts on special-status fish, their habitat, and EFH within the VHP permit area. However, riparian and instream aquatic and wetland habitats could also be impacted outside of the current VHP permit area in Santa Clara County, San Benito County, and Merced County. Impacts on riparian and wetland habitats in San Benito County would not be reduced by SBCCP compliance unless and until the SBCCP is adopted.

Program activities would result in temporal losses of woody riparian functions and values and some permanent losses of woody riparian habitat. Thus, significant residual impacts would remain. Implementation of Valley Water general program AMMs would reduce impacts on special-status fish, their habitat, and EFH. Mitigation Measure BIO-27 (Implement Compensatory Mitigation for Woody Riparian Vegetation and Permanent Stream and Wetland Impacts) would be implemented to reduce residual impacts due to the potential for loss of stream habitat or instream complexity resulting from permanent stream impacts to a less than significant level by replacing lost stream habitat functions through restoration, preservation, or enhancement. Mitigation Measures BIO-9 through BIO-16 would reduce impacts due to the loss of individual special-status fish due to program activities, including those covered and not covered under the VHP. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable with implementation of mitigation**.

Special-Status Amphibians and Reptiles

As discussed in Section 3.3, the California tiger salamander, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, and coast horned lizard are present in the program area vicinity. Program impacts within natural areas supporting these species would be avoided and minimized to the extent feasible by design and through Valley Water's careful approach to maintenance activities. Implementation of Valley Water general program AMMs would further reduce impacts on special-status amphibians and reptiles. Implementation of MM BIO-10 through MM BIO-21 would further reduce program impacts. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable with implementation of mitigation**.

Special-Status Birds and Mammals
As discussed in Section 3.3, the program would potentially result in impacts on nonbreeding special-status bird and mammal species in the program area, including the state and federally endangered California condor. Due to the anticipated limited temporary and permanent impacts of the program on suitable habitat for these species, and because the extent of these impacts would be limited relative to available habitat for these species in the region. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable**.

Nesting Common and Special-Status Birds
As discussed in Section 3.3, the program would result in impacts on a number of common and special-status birds that nest in the program area. None of these species are likely to breed (or in the case of burrowing owl, to roost) in Santa Clara County portions of the program area outside of the current VHP permit area, although all of these species may nest in San Benito County program areas, and burrowing owls could possibly nest in or near the Merced County program areas. Within the VHP permit area, impacts of VHP-covered activities on these species and their habitat would be less than significant.

In San Benito County and Merced County, implementation of Valley Water BMPs would avoid and minimize program impacts on individuals of by ensuring that active nests are identified and protected with appropriate no-disturbance buffers. Thus, program impacts due to the loss of individuals in San Benito County and Merced County would also be less than significant.

Outside of the VHP permit area, residual impacts of program activities on suitable nesting and foraging habitat for the least Bell's vireo, burrowing owl, and tricolored blackbird could occur in portions of the program area in San Benito County and Merced County. Although the probability of impacts to habitat that is actually used for nesting by these species is very low, due to the low populations of the least Bell's vireo and burrowing owl and very localized nature of tricolored blackbird colonies in the program area, there is some potential for program activities to result in the loss of nesting habitat. Given the low populations of these species, impacts on habitat used for breeding by any of these species within the prior 3 years would be a significant impact.

Implementation of Valley Water general program AMMs would reduce impacts on common and special status nesting birds. Implementation of MM BIO-21, MM BIO-22, and BIO-27 would reduce impacts on special status nesting birds. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable with implementation of mitigation**.

Potentially Breeding Special-Status Mammals and Breeding Bats
As discussed in Section 3.3, San Francisco dusky-footed woodrat, American badger, San Joaquin kit fox, and pallid bat, as well as common species of breeding bats, are present in the program area vicinity and can potentially breed and forage in the program area. Program impacts within natural areas supporting these species would be avoided and minimized to the extent feasible

by design and through Valley Water's careful approach to maintenance activities. Implementation of Valley Water general program AMMs would reduce impacts on potentially breeding special-status mammals and breeding bats. Implementation of Mitigation Measure BIO-21 through MM BIO-27 to further reduce impacts. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution would **not be cumulatively considerable with implementation of mitigation**.

Conclusion

Significant cumulative impacts would occur due to the removal of habitat for new development and infrastructure facilitated by the San Benito County 2035 General Plan and Envision San Jose 2040. =The program would implement AMMs and project specific mitigation measures to reduce impacts to special status species and habitats. With compliance with regulations and implementation of AMMs and MMs, the PMP's incremental impact on special-status species would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative impact on special status-species and habitats would **not be cumulatively considerable with implementation of mitigation**.

Riparian Habitat or Other Sensitive Natural Community

The San Benito County 2035 General Plan EIR determined that implementation of the San Benito County 2035 General Plan would result in significant impacts on riparian habitat. The EIR determined that development could result in long-term degradation of riparian and other sensitive plant communities, resulting in fragmentation, isolation of an important wildlife habitat, or disruption of natural wildlife movement corridors and/or important rearing habitat for juvenile steelhead. The loss or disruption of riparian habitats would be a significant impact due to the value of such habitat for a wide variety of common and special-status species, and for providing a wildlife movement corridor along creeks in the County. Development has the potential to reduce biological functions by reducing in-stream flows necessary for the maintenance of fisheries, riparian areas, and other aquatic resources. The cumulative impact of development would be significant.

Riparian and sensitive serpentine habitats and communities are located along streams throughout the program area. Because a number of pipelines cross streams, maintenance activities at these locations may result in the loss, modification, and/or disturbance of riparian vegetation over the course of the program, although the extent of such impacts would be limited.

Implementation of Valley Water BMPs and compliance with applicable VHP conditions would reduce impacts on riparian habitats, including Central California sycamore alluvial woodland habitat, within the VHP permit area to less than significant levels. VHP impact fees paid by Valley Water for VHP-covered impacts on riparian habitat would contribute to the VHP's conservation program, which includes riparian habitat restoration to offset impacts of VHP-covered activities. Impacts of herbicide application are not covered by the VHP, but BMPs will minimize non-target application of herbicides in riparian habitats. Riparian habitat, including

Central California sycamore alluvial woodland habitat, could also be impacted outside of the current VHP permit area in Santa Clara County, San Benito County, and Merced County.

Implementation of Valley Water general program AMMs would further reduce impacts on alkaline grassland habitat. Nevertheless, residual impacts would remain due to the potential direct and indirect effects of program activities on this habitat. Valley Water would implement MM BIO-16, MM BIO-27, MM BIO-28 and BIO-29 to reduce impacts on riparian and sensitive serpentine habitats and communities. When added to other cumulative projects, plans, and programs, the PMP's incremental contribution to impacts on riparian habitat and sensitive natural communities would **not be cumulatively considerable with implementation of mitigation**.

Conclusion

The proposed project would comply with federal and state regulations regarding the protection of riparian habitats. The program would also implement AMMs and project specific mitigation measures (MM BIO-16, MM BIO-27, MM BIO-28 and BIO-29) to reduce impacts on riparian and sensitive serpentine habitats and communities. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts and proposed AMMs and MMs, the PMP's incremental contribution to a cumulative impact on riparian habitat would not be cumulatively considerable with implementation of mitigation.

Wetlands and Waters

None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to wetlands or water.

Sensitive wetland and aquatic habitats are located throughout the program area. Program activities would result in temporal losses of wetland functions and values and some permanent losses of wetland vegetation. The program would implement MM BIO-16 (Alternative Water Source), MM BIO-20 (Protection of Wetlands), and MM BIO-27 (Implement Compensatory Mitigation for Woody Riparian Vegetation and Permanent Stream and Wetland Impacts) to reduce impacts to wetland and aquatic habitats to less than significant.

Conclusion

The cumulative impact from the project and cumulative growth projections would be **less than significant.**

Migration and Migration Corridors

None of the plans listed in Table 4.5-1 were found to have significant impacts related to migration and migration corridors. Habitat modifications associated with the program would not be so extensive as to create barriers to wildlife movement or remove large areas of habitat and result in a loss of connectivity. Thus, the effects of program activities on migration and migration corridors are less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on migration and migration corridors would be **less than significant**.

Conflict with any Local Policies or Ordinances Protecting Biological Resources
None of the plans listed in Table 4.5-1 were found to have significant impacts related to local policies or ordinances protecting biological resources. As discussed in Section 3.3, Valley Water is exempt from compliance with tree ordinances of Santa Clara County and various localities within the program area. The program would thus not result in impacts from conflicts with local policies or ordinances.

Conclusion
The cumulative impact from the project and cumulative growth projections on conflict with policies or ordinances protecting biological resources would be **less than significant**.

Conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan
None of the plans listed in Table 4.5-1 were found to have significant impacts related to a habitat conservation plan. The Santa Clara Valley Habitat Conservation Plan is beneficial and implementation of the VHP would have less than significant effects.

As discussed in Section 3.3, Valley Water is a signatory to the VHP, which is a Habitat Conservation Plan and Natural Community Conservation Plan. No other adopted habitat conservation plans or natural community conservation plans, or any other approved local, regional, or state habitat conservation plans or natural community conservation plans, apply to the program. Therefore, the program is not in conflict with the VHP and the program impacts would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on conflicts with an HCP or NCCP would be **less than significant**.

4.6.4 Hazards and Hazardous Materials

Cumulative Impact
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to hazards and hazardous materials. As discussed in Section 3.4, program impacts related to hazards and hazardous materials were found to be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on hazards and hazardous materials would be **less than significant**.

4.6.5 Transportation

Cumulative Impact

As noted in Table 4.5-1, the Santa Clara County General Plan EIR, San Benito County 2035 General Plan EIR, City of Campbell General Plan 2040 EIR, City of Gilroy 2040 General Plan EIR, City of Milpitas 2040 General Plan EIR, City of Morgan Hill 2035 General Plan EIR, Mountain View 2030 General Plan EIR, Envision San Jose 2040 EIR, and City of Saratoga 2040 General Plan EIR determined that implementation of the general plans would result in significant impacts on transportation. Specifically, the EIRs cited significant impacts from VMT, LOS, and conflict with applicable transportation plans. LOS impacts are no longer considered under CEQA so analysis of cumulative LOS impacts is not discussed further.

Conflict or be Inconsistent with Section 15064.3(b) of the State CEQA Guidelines

Analysis in the EIRs determined that the implementation of the general plans would result in an increase in VMT primarily due to the reclassification of land uses/zones to higher density land uses/zones to account for projected population growth. These reclassified areas may be located within low density residential neighborhoods that are not proximate to existing employment centers or public transportation. For example, Envision San Jose 2040 EIR determined that "new development and redevelopment allowed under the proposed General Plan will generate a significant increase in traffic, resulting in what is currently forecast to be a level of VMT per service population of 16.08 which is a substantial increase over existing conditions." Although the EIRs included policies and actions to reduce VMT in the long term, the cumulative impact would remain significant.

As discussed in Section 3.5, Valley Water currently conducts routine maintenance and inspections of program pipelines and infrastructure under the existing PMP, and the number of workers proposed under the updated PMP would be similar to those required under the existing PMP. The average number of trips that would be generated would not exceed the screening threshold of 110 trips per day. Therefore, the VMT associated with program implementation would not conflict with Section 15064.3(b) of the State CEQA Guidelines. The impact would be less than significant.

Conclusion

The cumulative projects and growth projections would result in a cumulative impact from generation of VMT. The VMT associated with program implementation would not conflict with Section 15064.3(b) of the State CEQA Guidelines as the average number of trips that would be generated would not exceed the screening threshold of 110 trips per day. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative VMT impact would **not be cumulatively considerable**.

Substantially Increase Hazards Related to a Geometric Design Feature or Incompatible Uses

None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to increased hazards related to a geometric design feature or incompatible uses.

The potential for cumulative impacts related to traffic hazards or geometric design features would be highly localized to a road segment and would generally not be a cumulative impact.

As discussed in Section 3.5, the program would implement AMM TRA-2 as part of the updated PMP which would require that pipes, hoses, and other equipment be routed around pedestrian pathways (e.g., sidewalks, trails) to the extent feasible, to reduce the potential for trip hazards or access constraints to the public. If rerouting would not be possible, pipes and hoses would be covered, and warning signage would be posted several feet beyond the location where the pathway was crossed by pipes or hoses, to reduce hazards to the public. The program impact on traffic hazards would be less than significant and would not contribute to cumulative impacts.

Conclusion
The cumulative impact from the project and cumulative growth projections on traffic hazards would be **less than significant**.

Result in Inadequate Emergency Access
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to inadequate emergency access.

The program would implement AMM TRA-1, requiring a TCP, which would include a description of emergency response vehicle access routes that would be compatible with the proposed program activity or identify an alternate route if the road or area was to be blocked completely, preventing access by an emergency responder. The program impact would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on emergency access would be **less than significant**.

4.6.6 Cultural Resources

Cumulative Impact
As noted in Table 4.5-1, the Santa Clara County General Plan EIR and San Benito County 2035 General Plan EIR determined that implementation of the general plans would result in significant impacts on cultural resources. Specifically, the EIRs cited potential impacts on undiscovered historic and cultural resources. None of the other plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to cultural resources.

Historical Resources
The Santa Clara County General Plan EIR and San Benito County 2035 General Plan EIR determined that there would be significant and unavoidable impacts to undiscovered historical resources due to new development facilitated by the general plans.

As discussed in Section 3.6, program activities involving excavation and ground disturbance would include repairs to existing water transmission and delivery infrastructure as well as

repairs to existing access roads. Because these facilities and roadways already are in place, and some level of disturbance already has occurred because of their initial construction; most of the proposed work is not expected to involve disturbance of previously undisturbed substrate materials, and thus the work would be unlikely to result in disturbance or destruction of undiscovered historical resources. Furthermore, the pipeline itself does not meet NRHP criterion has a protected historical resource. Therefore, program tasks carried out on these pipelines and appurtenances would not result in an impact to historic resources.

However, program pipelines rights-of-way traverse a wide variety of land uses and program tasks may be carried out in close proximity to potentially historic structures such as buildings or bridges. The use of heavy construction equipment could generate groundborne vibrations at levels that would damage nearby structures, including known and unknown historic resources. The program would implement MM NOI-3, which would require Valley Water or its contractor to monitor vibration levels at buildings and structures at specified distances within which risk of damage potential would exceed the 0.08 in/sec PPV threshold to reduce the potential for groundborne vibration to damage historic structures and buildings. MM NOI-3 also would require that work cease in the event vibration levels at nearby buildings or structures would exceed 0.08 in/sec PPV, and that a contingency construction plan would be implemented that would maintain vibration levels to below the damage potential threshold. The program impact would be less than significant with mitigation incorporated.

Conclusion

Significant impacts on historical resources would occur as a result of planned development in the Santa Clara County General Plan EIR and San Benito County 2035 General Plan. The resulting cumulative impact is considered significant. The program would implement MM NOI-3 which would require Valley Water or its contractor to monitor vibration levels at buildings and structures at specified distances within which risk of damage potential would exceed the 0.08 in/sec PPV threshold to reduce the potential for groundborne vibration to damage historic structures and buildings. With the implementation of mitigation measures, the PMP's incremental contribution to a cumulative impact on historical resources be less than considerable. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative impact on historical resources would **not be cumulatively considerable with mitigation incorporated**.

Archaeological Resources or Disturbance of Human Remains

The Santa Clara County General Plan EIR and San Benito County 2035 General Plan EIR determined that there would be significant impacts on undiscovered archaeological resources due to new development facilitated by the general plans.

As discussed in Section 3.6, program activities involving excavation and ground disturbance would include repairs to existing water transmission and delivery infrastructure as well as repairs to existing access roads. Because these facilities and roadways already are in place, and some level of disturbance already has occurred because of their initial construction; most of the

proposed work is not expected to involve disturbance of previously undisturbed substrate materials, and thus the work would be unlikely to result in disturbance of human remains or adverse effects on buried archaeological resources, even if the surrounding area is modeled as having high or highest sensitivity percentages. However, if any program activities would require disturbance to previously undisturbed substrate materials (e.g., repairs that would require disturbance outside the original disturbance prism), these activities could damage or destroy buried archaeological resources or disturb human remains.

Implementation of MM CUL-1 would require a site-specific review of known archaeological resources for any work areas outside previously disturbed areas prior to ground disturbance and consultation with an RPA to establish program task-specific protection measures, if warranted. MM CUL-1 also requires formal consultation with the Native American community to identify potential areas of concern or burial sites. In the unlikely event inadvertent discovery of archaeological resources or human remains occur during ground-disturbing activities, including dewatering, MM CUL-2 would ensure appropriate evaluation of the resource or remains occurs and protection or preservation measures are implemented. The program impact would be less than significant with mitigation incorporated.

Conclusion

Significant impacts on undiscovered archaeological resources would occur as a result of planned development in the Santa Clara County General Plan EIR and San Benito County 2035 General Plan. The resulting cumulative impact is considered significant. The program is not expected to encounter unidentified archaeological resources as the work would occur largely in previously disturbed areas. If any program activities require disturbance to previously undisturbed substrate materials (e.g., repairs that would require disturbance outside the original disturbance prism), the program would implement MM CUL-1 and MM CUL-2 would ensure appropriate evaluation of the resource or remains occurs and protection or preservation measures are implemented. With the implementation of MM CUL-1 and MM CUL-2, the PMP's incremental impact on archaeological resources would be less than considerable. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative cultural impact would **not be cumulatively considerable with mitigation incorporated**.

4.6.7 Tribal Cultural Resources

Cumulative Impact

None of the plans listed in Table 4.5-1 were found to have significant impacts related to tribal cultural resources.

As discussed in Section 3.7, program activities that would involve ground disturbance and have the potential to impact TCRs would include dewatering and ground disturbance activities. Program activities involving excavation and ground disturbance would include repairs to existing water transmission and delivery infrastructure as well as repairs to existing access roads. Because these facilities and roadways are already in place, most of the proposed work is

not expected to disturb previously undisturbed sediment. If any program activities require disturbance to previously undisturbed substrate materials (e.g., repairs that would require disturbance outside the original disturbance prism), the program would implement MM CUL-1 and MM CUL-2 would ensure appropriate evaluation of the resource or remains occurs and protection or preservation measures are implemented.

Implementation of MM CUL-1 would require a site-specific review of known archaeological resources, including TCRs, for any work areas outside previously disturbed areas prior to ground disturbance and consultation with an RPA to establish program task-specific protection measures, if warranted. MM CUL-1 also requires formal consultation with the Native American community to identify potential areas of concern or burial sites. In the unlikely event that potential TCRs are discovered during ground-disturbing activities, including dewatering, MM CUL-2 would ensure appropriate evaluation of the resource or remains occurs and protection and/or preservation measures are implemented in compliance with regulatory requirements. The program impact would be less than significant with mitigation incorporated.

Conclusion

The project and cumulative growth projections have a potential to result in significant cumulative impacts on tribal cultural resources. With the implementation of MM CUL-1 and MM CUL-2, the PMP's incremental impact on tribal cultural resources would be less than considerable. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative cultural impact would **not be cumulatively considerable with mitigation incorporated**.

4.6.8 Air Quality

Cumulative Impact

As noted in Table 4.5-1, the Santa Clara County General Plan EIR, San Benito County 2035 General Plan EIR, City of Campbell General Plan 2040 EIR, City of Gilroy 2040 General Plan EIR, City of Morgan Hill 2035 General Plan EIR, Mountain View 2030 General Plan EIR, Envision San Jose 2040 EIR, and Sunnyvale General Plan EIR determined that implementation of the general plans would result in significant impacts on air quality. Specifically, the EIRs cited potential impacts related to the emission of criteria pollutants and conflicts with air quality plans.

Conflict with or Obstruct Implementation of the Applicable Air Quality Plan

As noted in Table 4.5-1, the San Benito County 2035 General Plan EIR determined that implementation of the San Benito County 2035 General Plan would conflicts with an applicable air quality plan. The San Benito County 2035 General Plan EIR stated that implementation of the 2035 General Plan would result in a significant and unavoidable impact due to the differences in the horizon years and population estimates of the 2035 General Plan and Monterey Bay Air Resources District (MBUAPCD) air quality plans.

As discussed in Section 3.8, estimated emissions during implementation of the program would not exceed the BAAQMD significance thresholds for particulate matter (PM_{10} and $PM_{2.5}$) and ozone precursors (NOx and ROG). Construction activity levels and associated emissions from routine pipeline maintenance would remain consistent with current activity and emissions levels because the program would not increase the frequency or intensity of maintenance and inspections (i.e, one major pipeline project has occurred annually over the last 10 years and one major project would occur annually in the future). While this analysis considered the emissions from the maximum intensity activity, the net emissions from the program relative to existing conditions would be near zero. Furthermore, as part of the program, Valley Water would implement AMM AIR-1, which would require that dust control measures be implemented in accordance with current BAAQMD CEQA guidelines for controlling fugitive dust in the form of PM_{10} and $PM_{2.5}$. Therefore, program implementation would not conflict with or obstruct the strategies and goals of an applicable air quality plan. The project would thus not contribute to a cumulative impact from conflict with an air quality plan.

Conclusion

Significant cumulative impacts related to conflicts with an applicable air quality plan would occur in San Benito County based on cumulative growth projections. The PMP would not involve construction of any new development or expansion of capacity to serve new development; therefore, program implementation would not induce population growth that would in turn increase emissions. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative air quality impact **not be cumulatively considerable**.

Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Program Region is Non-Attainment under an Applicable Federal or State Ambient Air Quality Standard

As noted in Table 4.5-1, the Santa Clara County General Plan EIR, City of Campbell General Plan 2040 EIR, City of Gilroy 2040 General Plan EIR, City of Morgan Hill 2035 General Plan EIR, Mountain View 2030 General Plan EIR, Envision San Jose 2040 EIR, and Sunnyvale General Plan EIR determined that implementation of the planned development would result in significant impacts related to the emission of criteria pollutants. For all of the general plans, the increase in criteria pollutants is due to the reclassifications of land uses and zones to a higher density and the subsequent construction emissions for the projected buildout. The EIRs found that implementation of proposed general plan policies alone could not prevent emissions from exceeding air quality thresholds. Thus, impacts were determined to be significant and unavoidable.

As discussed in Section 3.8, the program would only emit emissions during construction and maintenance activities. Fugitive dust in the form of PM_{10} and $PM_{2.5}$ would be generated from construction equipment and vehicle use on paved and unpaved roads and from ground-disturbing activities. To control fugitive dust, Valley Water would implement AMM AIR-1, requiring implementation of dust control measures in compliance with the 2022 BAAQMD CEQA Air Quality Guidelines. With implementation of these measures, the BAAQMD

threshold for fugitive dust would not be exceeded. The program impact would be less than significant.

Conclusion
Significant cumulative impact on criteria air pollutants would occur based on the cumulative buildout of the general plans. While the program would emit emissions, including PM_{10} and $PM_{2.5}$, the program would not involve construction of any new development or expansion of capacity to serve new development; therefore, program implementation would not induce population growth that would in turn increase emissions. Valley Water would also implement AMM AIR-1 to further control fugitive dust in the form of PM_{10} and $PM_{2.5}$. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative air quality impact would **not be cumulatively considerable**.

Expose Sensitive Receptors to Substantial Pollutant Concentrations
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to the exposure of sensitive receptors to substantial pollutant concentrations. Pollutant concentrations disperse with distance from the source and cumulative impacts would only occur if multiple projects were located within 1 mile or less.

As discussed in Section 3.8, the average daily emissions of particulate matter (PM_{10} and $PM_{2.5}$) and precursors to the formation of ozone (NOx and ROG) generated by program activities would not exceed criteria pollutant significance thresholds. Therefore, emissions of these pollutants would not be exceeded for local community risk and hazard impacts. The program would also implement AMM AIR-1, which would require implementation of various dust control measures to reduce dust (including airborne asbestos) at program work sites and during sediment transport. Compliance with applicable regulations and implementation of AMMs would reduce the program's potential to expose sensitive receptors to airborne asbestos. The program impact would be less than significant.

Conclusion
The cumulative impact from substantial pollutant concentrations resulting from the project and cumulative growth projections would be **less than significant**.

Result in other Emissions (such as those Leading to Odors) Adversely Affecting a Substantial Number of People.
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to odors.

As discussed in Section 3.8, the potential odors from temporary stockpiling of soils would be minimized with implementation of BMP AQ-2, which would avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses; and by disposing odor stockpiles at appropriate landfills. The program impact would be less than significant.

Conclusion
The cumulative odor impact from the project and cumulative growth projections would be **less than significant**.

4.6.9 Greenhouse Gas Emissions

Cumulative Impact
As noted in Table 4.5-1, the San Benito County 2035 General Plan EIR, City of Campbell General Plan 2040 EIR, City of Gilroy 2040 General Plan EIR, City of Morgan Hill 2035 General Plan EIR, Envision San Jose 2040 EIR, and City of Santa Clara 2010–2035 General Plan EIR determined that implementation of the general plans would result in project and cumulative GHG impacts.

Generate GHG Emissions and Conflict with an Applicable Plan, Policy, or Regulation
The increase in GHG emissions from planned development is due to the reclassifications of land uses and zones to a higher density and the subsequent construction emissions for the projected buildout. The EIRs found that implementation of proposed general plan policies alone could not prevent emissions from exceeding GHG emission thresholds. Thus, cumulative impacts would be significant and unavoidable.

As discussed in Section 3.9, the program would generate GHG emissions from the use of vehicles to transport workers to program work sites, periodic use of construction equipment, and testing and potential use of backup generators. The type and intensity of program activities under the program would continue to be comparable to the activities that are ongoing under the existing PMP. As discussed in Section 3.9, the SMAQMD 1,100 MTCO2e/year threshold would not be exceeded as the pipeline maintenance activities would remain consistent with current levels and the GHG emissions would thus not increase from baseline conditions. In addition, the total equipment use and activity levels for the program documented in Appendix J would be less than the equipment use and activity levels for the Coyote Creek Flood Protection Project, where detailed GHG modeling demonstrated the emissions would be less than the SMAQMD threshold of 1,100 MTCO2e/year, therefore the SMAQMD 1,100 MTCO2e/year threshold would not be exceeded. Additionally, applicable BAAQMD BMPs have been incorporated as program specific AMMs and would require the use of zero-emission and hybrid-powered equipment to the greatest extent possible, limit the use of portable diesel engines, and encourage worker carpooling to reduce impacts. The program would also include installation of up to approximately 20 new backup generators that would produce emissions. In total, the approximately 20 new backup generators associated with the updated PMP would emit approximately 20 MT CO_2e per year, which would not exceed the BAAQMD's threshold of 10,000 MT CO_2e per year for new stationary sources. Therefore, the updated PMP would not conflict with the BAAQMD's significance thresholds for GHG emissions. The program impact would be less than significant.

Conclusion
Significant cumulative GHG impacts would result from the cumulative buildout under the general plans. While the program would emit GHG emissions, the program would not involve

construction of any new development or expansion of capacity to serve new development; therefore, program implementation would not induce population growth that would in turn increase GHG emissions. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative GHG impact would **not be cumulatively considerable**.

4.6.10 Energy

Cumulative Impact

As noted in Table 4.5-1, the City of Campbell General Plan 2040 EIR determined that implementation of the City of Campbell General Plan 2040 would result insignificant impacts to energy.

Result in a Potentially Significant Environmental Impact due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources and Conflict With or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

The increase in energy use under the City of Campbell General Plan 2040 is due to the reclassifications of land uses and zones to a higher density and the subsequent energy use for the projected buildout.

As discussed in Section 3.10, energy consumption associated with conducting program activities under the updated PMP would be equivalent to those generated by the existing PMP. Therefore, the program impact would be less than significant.

Conclusion

Significant cumulative impacts related to energy would occur as a result of projected development under the planned growth projections. Energy consumption associated with conducting program activities under the updated PMP would be equivalent to those generated by the existing PMP. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative energy impact would **not be cumulatively considerable**.

4.6.11 Noise

Cumulative Impact

As noted in Table 4.5-1, the Santa Clara County General Plan EIR, San Benito County 2035 General Plan EIR, City of Milpitas 2040 General Plan, City of Morgan Hill 2035 General Plan EIR, Mountain View 2030 General Plan EIR, Envision San Jose 2040 EIR, City of Santa Clara 2010 – 2035 General Plan EIR, and Sunnyvale General Plan EIR determined that implementation of the general plans would result in significant noise impacts. Specifically, the EIRs cited potential impacts related to construction, traffic, and airport noise.

Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels

As noted in Table 4.5-1, the Santa Clara County General Plan EIR, San Benito County 2035 General Plan EIR, City of Milpitas 2040 General Plan, City of Morgan Hill 2035 General Plan

EIR, Mountain View 2030 General Plan EIR, Envision San Jose 2040 EIR, City of Santa Clara 2010 – 2035 General Plan EIR, and Sunnyvale General Plan EIR determined that implementation of the general plans would result in project and cumulative impacts related to construction and traffic noise. For all of the general plans, the increase in ambient noise levels is due to the reclassifications of land uses and zones to a higher density and the subsequent construction buildout. The increase in construction would result in temporary construction noise and traffic noise. The increase in population from buildout would increase traffic noise as it is assumed that most of the new residents would drive vehicles. The EIRs found that implementation of proposed general plan policies alone could not prevent construction and traffic noise from exceeding ambient noise thresholds. Thus, impacts were determined to be significant and unavoidable. It is noted that cumulative noise would only be generated if two projects were within 1,000 feet of each other as noise levels attenuate with distance from the source.

As discussed in Section 3.11, the increase in construction-related traffic noise from program activities would be less than 3 dBA which would be less than significant.

As discussed in Section 3.11, the program may conflict with the noise ordinance for City of Cupertino and the Town of Los Gato if simultaneous operation of a jackhammer and concrete saw is required within 25 feet of a sensitive receptor. Although implementation of AMM NOI-1 would reduce the noise impacts from construction vehicles and equipment, noise generated by construction still may exceed the thresholds that are identified in local noise ordinances.

Although nighttime work is anticipated to be limited, it would have the potential to generate noise at sensitive receptors in excess of applicable nighttime noise standards or require work to be performed outside allowable hours. Implementation of this MM NOI-2 would require that before undertaking nighttime work, Valley Water or its contractor would prepare a nighttime noise control plan. Although implementation of MM NOI-2 would reduce nighttime and weekend noise impact, carrying out construction during these prohibited time frames would not comply with local noise ordinances. No other mitigation measures for this impact would be feasible because work during prohibited hours may be required to ensure the reliability and integrity of critical infrastructure and/or may be required to avoid daytime traffic and circulation impacts (and related hazards) on major roadways. Therefore, program impacts would be **significant and unavoidable.**

Conclusion

While cumulative noise impacts are highly localized (e.g., within 1,000 feet) because the cumulative growth projections would result in significant noise impacts, the cumulative noise impact would be significant. As discussed in the Section 4.11, the program would generate noise that would conflict with local ordinances and thus be significant and unavoidable. The project would thus have a considerable contribution to a cumulative noise impact and the resulting cumulative noise impact is significant and unavoidable.

Generate Excessive Groundborne Vibration or Groundborne Noise Levels
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to groundborne noise levels. Vibration attenuates rapidly with distance and cumulative vibration impacts would only occur if two vibration sources were located within 100 feet of each other.

As discussed in Section 4.11, Valley Water would implement AMM NOI-1 and MM NOI-3 to reduce noise and vibration. Implementation of AMM NOI-1 would reduce vehicle and equipment noise, including groundborne vibration noise, through practices such as locating staging areas and equipment as far as possible from receptors, orienting equipment to direct noise away from sensitive receptors, limiting idling, and using electrically powered equipment. Valley Water would implement MM NOI-3, which would require Valley Water or its contractor to monitor vibratory levels at buildings and structures at specified distances within which risk of damage potential would exceed the 0.08 in/sec PPV threshold. MM NOI-3 also would require that work cease in the event vibration levels at nearby buildings or structures would exceed 0.08 in/sec PPV, and that a contingency construction plan would be implemented that would maintain vibration levels to below the damage potential threshold. MM NOI-3 would also reduce the indoor vibration level that would be experienced by people occupying adjacent buildings, thereby reducing the potential for human annoyance below thresholds. The program impact from vibration would be less than significant with mitigation incorporated.

Conclusion
Due to the attenuation of vibration with distance and because vibration generating activities would not be conducted in proximity to the program activities at the same time as the program, the cumulative vibration impact from the project and cumulative growth projections would be **less than significant**.

Expose People Residing or Working in the Program Area to Excessive Noise Levels within 2 Miles of a Public Airport or Public Use Airport
The Envision San Jose 2040 EIR determined that build out from the general plan would cause additional development near the San José International Airport. While effective measures exist to protect interior noise levels (such as installation of acoustically rated windows and walls), and are required in most communities in the Bay Area, the ambient exterior noise levels will still exceed community standards at some locations due to build-out of the San José International Airport Master Plan and increasing air transportation levels. Thus, it was determined that noise impacts were significant and unavoidable.

The program noise was found to be within the normally acceptable CNEL ranges around all airports within 2 miles of the program. Therefore, implementation of program in the vicinity of airports would not expose people residing or working in the program area to excessive noise levels. The impact would be less than significant.

Conclusion
Significant cumulative impacts related to airport noise would occur as a result of development under the Envision San Jose 2040 EIR. This impact is based on buildout of the general plan near the San José International Airport. Noise from program activities would be sporadic and spread across the length of the pipeline. Noise levels within 2 miles of an airport, including San José International Airport, would be within the normally acceptable CNEL ranges. Therefore, the PMP's incremental impact on airport noise would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative noise impact would **not be cumulatively considerable**.

4.6.12 Aesthetics

Cumulative Impact

As noted in Table 4.5-1, the San Benito County 2035 General Plan EIR and Envision San Jose 2040 EIR determined that implementation of the general plans would result in significant aesthetic impacts. Specifically, the EIRs cited potential impacts related to visual quality and character.

Have a Substantial Adverse Effect on a Scenic Vista, Substantially Degrade the Existing Visual Character or Quality of Public Views in Nonurbanized Areas, or Substantially Damage Scenic Resources within a State Scenic Highway
The Envision San Jose 2040 EIR determined that there would be significant aesthetic impacts due to the build out of the Communications Hill Specific Plan area and the North Coyote Planning Area (in conformance with previously approved entitlements) which would alter or block views of grassy or wooded hillsides through the construction of new, multiple-storied development.

The San Benito County 2035 General Plan EIR determined that future growth in unincorporated San Benito County and development in cities within the County would result in the intensification of existing urban and other uses, as well as the conversion of open space to urban land uses. Collectively, these activities could degrade the existing visual character and quality of scenic resources. No measures in addition to the 2035 General Plan policies and mitigation would reduce the magnitude of this impact to a less than significance level.

As discussed in Section 3.12, because the program would be limited to inspection and maintenance activities, any visual impacts (including those along designated scenic roadways) would be temporary and short term, occurring in increments from a few days to a few weeks. All program work sites would be returned to near pre-activity conditions at the completion of inspection and maintenance activities. Furthermore, program activities would occur along an existing pipeline alignment within public ROWs and would not involve damage to scenic resources such as rock outcroppings or historic buildings. In addition, the program would implement AMM AES-1, which would require program activities to avoid establishing staging areas within 1,000 feet of any scenic resources, such as designated vista points along urban or

rural trails, visible rock outcroppings, or designated historic buildings to reduce the visibility of staging areas from scenic resources in the program area. Therefore, program implementation would not have a substantial adverse effect on a scenic vista and would not substantially degrade or damage the existing visual character, quality of public views, or scenic resources in the program area. The program impact would be less than significant.

Conclusion
The program would not add to the significant and unavoidable impact in the Envision San Jose 2040 EIR as the impact is geographically limited to the Communications Hill Specific Plan area and the North Coyote Planning Area where the PMP is not located. Significant cumulative impacts in the San Benito County 2035 General Plan are primarily due to the urbanization of rural and agriculture areas in the County. The program is a maintenance project that would not spur additional development or population growth in the County. The program would be limited to temporary visual impacts during construction and maintenance activities. Thus, the program would not change the permanent visual character of the County and the PMP's incremental impact on visual quality would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative visual impact would **not be cumulatively considerable**.

In Urbanized Areas, Conflict with Applicable Zoning or other Regulations Governing Scenic Quality
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to conflicts with applicable zoning or other regulations governing scenic quality. As discussed in Section 3.12, program activities would not conflict with applicable zoning or other regulations governing scenic quality. The program impact would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on conflicts with regulations governing scenic quality would be **less than significant**.

Create a New Source of Substantial Light or Glare
The San Benito County 2035 General Plan EIR determined that implementation of the San Benito County 2035 General Plan would result in significant impacts due to the creation of new light and glare. Although the San Benito County 2035 General Plan includes policies to reduce light and glare, new development impacts would still have the potential to substantially increase the amount of nighttime light and glare in the County, permanently diminishing nighttime views of the sky. Light and glare also adversely affect light-sensitive parks, rural residential and agricultural uses, and recreation and open space uses.

As discussed in Section 3.12, program activities typically would be conducted during daytime hours. However, on limited occasions, extended nighttime construction work hours may be required. To maintain visibility, security, and safety of crews, use of temporary lighting would

be required during nighttime construction activities. The program would implement MM AES-1, which would require Valley Water or its contractors to limit nighttime construction activities to the extent feasible to reduce the impact of temporary construction lighting on nighttime views. The program impact would be less than significant with mitigation incorporated.

Conclusion
Significant cumulative impacts from light and glare would occur in San Benito County due to the urbanization of rural and agriculture areas in the County. The program is a maintenance project that would not spur additional development or population growth in the County. All light and glare required by program activities would be temporary during construction and maintenance activities. The program would implement MM AES-1 to further limit nighttime construction activities to the extent feasible to reduce the impact of temporary construction lighting on nighttime views. With the implementation of mitigation measures, the program would not add permanent light or glare in the County and the PMP's incremental impact would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative light and glare impact would **not be cumulatively considerable with mitigation incorporated**.

4.6.13 Wildfire

Cumulative Impact
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to wildfire. As discussed in Section 3.13, program impacts related to wildfire would be less than significant.

Conclusion
The cumulative impact on wildfire from the project and cumulative growth projections would be **less than significant**.

4.6.14 Utilities and Service Systems

Cumulative Impact
As noted in Table 4.5-1, the City of Santa Clara 2010 – 2035 General Plan EIR determined that implementation of the City of Santa Clara 2010 – 2035 General Plan would result in project and cumulative impacts on utilities and services systems. Specifically, the General Plan would result in cumulative impacts related to inadequate landfill capacity.

Relocation or Construction of New or Expanded Utilities
None of the plans listed in Table 4.5-1 were found to have significant impacts related to the relocation or construction or new or expanded utilities. As discussed in Section 3.14, the program would include tasks to maintain and repair existing water facilities but would not include tasks that would increase the system capacity or require any expansion or new water

facilities. Instead, program activities would meet the pipeline conveyance system's existing operational needs. The program's impact would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections from new or expanded utilities would be **less than significant**.

Insufficient Water Supplies During Normal, Dry, and Multiple Dry Years
None of the plans listed in Table 4.5-1 were found to have significant impacts related to insufficient water supplies during normal, dry, and multiple dry years. As discussed in Section 3.14, although the amount of water needed for program activities is not possible to quantify, it is expected to be minimal and would constitute a negligible amount of Valley Water's total supply. Program activities would not require more potable water supply than would be available during normal, dry, or multiple dry years because of the limited amount of water required and short-term nature of the demand. The program impact would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on water supplies would be **less than significant**.

Result in a Determination by the Wastewater Treatment Provider that it has Inadequate Capacity to Serve the Program's Projected Demand
None of the plans listed in Table 4.5-1 were found to have significant impacts related to inadequate capacity at a wastewater treatment provider. Valley Water would coordinate with and is required to obtain approval from the authority that owns the wastewater treatment facility in advance of releases, so that the inflow would be processed in compliance with the authority's requirements. The requirement for approval from the wastewater authority before a recycled water release to a wastewater system would ensure adequate capacity. The program impact would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on wastewater treatment capacity would be **less than significant**.

Generate Solid Waste in Excess of State or Local Standards
As noted in Table 4.5-1, the City of Santa Clara 2010 – 2035 General Plan EIR determined that implementation of the City of Santa Clara 2010 – 2035 General Plan would result in significant impacts related to inadequate landfill capacity. Development allowed under the 2010-2035 General Plan would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs through 2024, however the City has no specific plan for disposing of solid waste beyond 2024 but would undertake a process to identify a solution prior to 2024.

As discussed in Section 3.14, all solid waste generated by PMP activities would be transported and disposed of at permitted landfills in accordance with all applicable federal, State, and local regulations, consistent with procedures implemented for the existing PMP. All landfills identified for disposal and recycling of construction and demolition debris are permitted to accept the types of solid waste that would be generated by program activities and are required to meet federal, State, and local solid waste regulations. The impact would be less than significant.

Conclusion
The cumulative development in the City of Santa Clara would result in a significant cumulative impact on solid waste. All solid waste generated by program activities would be transported and disposed of at permitted landfills in accordance with all applicable federal, State, and local regulations, consistent with procedures implemented for the existing PMP. Therefore, the PMP's incremental impact on drainage and flooding would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative solid waste impact would **not be cumulatively considerable**.

Comply with Federal, State, and Local Management and Reduction Statutes and Regulations Related to Solid Waste.
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to solid waste regulations. As discussed in Section 3.14, all landfills identified for disposal and recycling of construction and demolition debris are permitted to accept the types of solid waste that would be generated by program activities and are required to meet federal, State, and local solid waste regulations. The program impact would be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections would be **less than significant**.

4.6.15 Recreation

Cumulative Impact
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to recreation. Program impacts related to recreation were found to be less than significant.

Conclusion
The cumulative impact from the project and cumulative growth projections on recreation would be **less than significant**.

4.6.16 Public Services

Cumulative Impact

As noted in Table 4.5-1, the Santa Clara County General Plan EIR determined that implementation of the Santa Clara County General Plan would result in significant impacts on public services related to schools.

Fire Protection

None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to fire protection. As discussed in Section 3.16, Valley Water would implement AMM TRA-1, which would require a Traffic Control Plan (TCP) be prepared and implemented for activities in a city, county, or State-owned road. The TCP would contain circulation and detour plans and provide access for emergency response vehicles. Thus, program tasks requiring work in roadways would not adversely affect emergency response times. The PMP would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or generating a need for new or physically altered government facilities. The program impact would be less than significant.

Conclusion

The cumulative impact on fire protection from the project and cumulative growth projections would be **less than significant**.

Police Protection

None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to police protection. As discussed in Section 3.16, Valley Water would implement AMM TRA-1, which would require a TCP be prepared and implemented for activities in a city, county, or State-owned road. The TCP would contain circulation and detour plans and provide access for emergency response vehicles. Thus, program tasks requiring work in roadways would not adversely affect emergency response times. The PMP would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or generating a need for new or physically altered government facilities. The program impact would be less than significant.

Conclusion

The cumulative impact on police protection from the project and cumulative growth projections would be **less than significant**.

Schools

As noted in Table 4.5-1, the Santa Clara County General Plan EIR determined that implementation of the Santa Clara County General Plan would result in significant project impacts to schools. Specifically, it was determined that the Los Gatos, Gilroy and Morgan Hill schools are already at capacity so an increase in population from implementation of the Santa Clara County General Plan could increase enrollment within the rural unincorporated area which would have a significant impact on schools that are already overcrowded.

The PMP would not involve construction of any new development or expansion of capacity to serve new development; therefore, program implementation would not induce population growth or result in an increased demand for schools. Program impacts would be less than significant.

Conclusion
The cumulative impact on schools from development in Santa Clara County would be significant. As the PMP would not induce population growth or increase the demand of schools, the PMP's incremental impact on schools would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution to a cumulative impact on schools would **not be cumulatively considerable**.

Parks
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to parks. The PMP would not result in substantial adverse physical impacts associated with the provision of parks. The program impact would be less than significant.

Conclusion
The cumulative impact on parks from the project and cumulative growth projections would be **less than significant**.

Other Public Facilities
None of the plans listed in Table 4.5-1 were found to have significant project or cumulative impacts related to public facilities. The PMP would not result in substantial adverse physical impacts associated with the provision of new or physically altered other public facilities or generating a need for new or physically altered government facilities. The program impact would be less than significant.

Conclusion
The cumulative impact on other public facilities from the project and cumulative growth projections would be **less than significant**.

4.6.17 Agriculture and Forestry

Cumulative Impact

As noted in Table 4.5-1, the San Benito County 2035 General Plan EIR, City of Gilroy 2040 General Plan EIR, City of Morgan Hill 2035 General Plan EIR, Envision San Jose 2040 EIR, and City of Saratoga 2040 General Plan EIR determined that implementation of the general plans would result in project and cumulative impacts to agriculture and forestry. Specifically, the EIRs cited potential impacts related to the conversion of Important Farmland to nonagricultural use.

Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland)

Conflict with Existing Zoning for Agricultural Use, or a Williamson Act Contract

Involve Other Changes in the Existing Environment which Could Result in Conversion of Farmland to Non-Agricultural Use

For all of the general plans, the project and cumulative agriculture impacts are related to the conversion of agriculture land due to the reclassifications of land uses and zones to a higher density and the subsequent construction for the projected buildout. While conservation easements or strengthened zoning protections for agriculture could be used to limit future loss of Prime Farmland in the planning areas, no feasible mitigation measures are available to offset the cumulative loss of agricultural land, especially prime agricultural land, within areas previously planned and designated for development. Therefore, the cumulative loss of agricultural land would remain significant and unavoidable.

As discussed in Section 3.17, several program pipelines traverse agricultural areas that are designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, including the South County Recycled Water Pipeline, Santa Clara Conduit, and the Cross Valley Pipeline. PMP activities along these pipelines may require the temporary use of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to accommodate staging and access. However, all program activities would be temporary and would not require the conversion of Prime Farmland or other protected agriculture zones. Program tasks would not conflict with existing zoning for agricultural use or Williamson Act contracts. Therefore, the PMP would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. The impact would be less than significant.

Conclusion

Significant impacts on agriculture due to development in the general plans would result from the conversion of agriculture land to non-agriculture uses, including the conversion of Prime Farmland. Program impacts on lands used for agricultural purposes would be short-term and temporary. The program would not have other direct or indirect impacts that would convert farmland to non-agricultural use. Therefore, the PMP's incremental impact on agriculture would not be significant. When added to other cumulative projects, plans, and programs, considering the minor magnitude of the PMP's impacts, the PMP's incremental contribution cumulative agriculture impact would **not be cumulatively considerable**.

4.7 Effects Found Not to be Significant

CEQA Guidelines section 15128 states that:

> An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Such a statement may be contained in an attached copy of an Initial Study.

As explained in Section 3.0.5, Resources Eliminated from Further Analysis, Valley Water determined there would be no impacts to mineral resources or population and housing from implementation of the proposed PMP update.

5 Alternatives

This chapter evaluates alternatives to the PMP and examines the potential environmental impacts associated with each alternative. The proposed PMP Update is compared to the No Project Alternative and Less Frequent Inspection and Maintenance Alternative, and the relative environmental advantages and disadvantages of each are identified.

5.1 Alternatives Analysis Approach

5.1.1 CEQA Requirements

Section 15126.6 of the CEQA Guidelines requires that an EIR describe a range of reasonable alternatives to the project (or program, as applicable here) that would feasibly attain the basic objectives and avoid or substantially lessen any significant effects. Alternatives may be eliminated from detailed analysis in the EIR if they fail to meet the most basic of project objectives, are determined to be infeasible, or cannot be demonstrated to avoid or lessen significant environmental impacts. More specifically, CEQA Guidelines Section 15126.6(a) states:

> "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible."

Key provisions of this CEQA Guidelines Section 15126.6 are summarized below:

- The discussion of alternatives shall focus on alternatives to the program, which are capable of avoiding or substantially lessening any significant effects of the program, even if these alternatives would impede to some degree the attainment of the program objectives or would be more costly.
- The No Project Alternative shall be evaluated along with its impact. The No Project analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the program were not approved.

- When the No Project Alternative is the revision of an existing land use or regulatory plan, policy, or ongoing operation, the No Project Alternative will be the continuation of the existing plan, policy, or operation into the future.
- The range of alternatives required in an EIR is governed by a "rule of reason;" therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. What constitutes a "reasonable range" of alternatives will vary with the facts of each project and should be guided only by the purpose of offering substantial environmental advantages over the project proposal which may be "feasibly accomplished in a successful manner" considering the economic, environmental, social, and technological factors involved (See *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 801 [citing Public Resource Code Sections 21002, 21061.1; CEQA Guidelines Section 15364]).
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.
- Not every conceivable alternative must be addressed, nor do infeasible alternatives need to be considered (CEQA Guidelines Section 15126.6 [a]).
- The factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to alternative sites. (CEQA Guidelines Section 15126.6[f][1]). Additionally, the EIR needs to examine in detail the basic program objectives.
- An EIR need not consider every conceivable alternative to a project, and there is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason (CEQA Guidelines Section 15126.6[a]).

5.1.2 Program Objectives

The program objectives are defined in Chapter 2, Project Description, of this Program EIR. The program objectives are to:

1. Define standard practices and procedures for maintenance activities associated with Valley Water's conveyance systems
2. Enhance operational flexibility and adaptive management opportunities for evaluating and improving the maintenance activities defined in the PMP through learned experiences and successive planning over time.
3. Streamline the environmental documentation and local, state, and federal permit processing where required to facilitate efficient and timely maintenance and repair of the pipeline system.

5.2 Alternatives Screening Methodology

5.2.1 CEQA Requirements for Alternatives

The evaluation of alternatives to the proposed PMP update was performed using a screening process that consisted of three steps:

- Step 1: Clarify the description of each alternative to allow comparative evaluation.
- Step 2: Evaluate each alternative using CEQA criteria (i.e., consistency with program objectives, feasibility, and potential to eliminate significant environmental effects).
- Step 3: Determine the potential feasibility of each alternative to determine which alternatives will undergo full analysis in the EIR.

Infeasible alternatives and alternatives that clearly offered no potential for overall environmental advantage over the proposed PMP update were eliminated from further analysis. Following the three-step screening process, the advantages and disadvantages of the remaining alternatives were carefully weighed as part of Step 2, with respect to CEQA's criteria for consideration of alternatives. The criteria are discussed in greater detail in the following subsections.

5.2.2 Consistency with Program Objectives

Alternatives should meet most of the basic program objectives. CEQA requires the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives" (CEQA Guidelines Section 15126.6 [b]). Therefore, it is not required that each alternative meet all the program objectives.

5.2.3 Feasibility

CEQA Guidelines Section 15364 defines feasibility as:

> "…capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

The selection of alternatives is largely governed by what CEQA terms the "rule of reason," meaning that the analysis should remain focused, not on every possible eventuality, but rather on the alternatives necessary to permit a reasoned choice. Of the alternatives identified, the Program EIR must analyze those alternatives that are feasible, while still meeting most of the program objectives.

According to the CEQA Guidelines (section 15126.6(f)(1)), site suitability, economic viability, availability of infrastructure, general program consistency, consistency with other programs and policies or other regulatory limitations, jurisdictional boundaries, and proponent's control over alternative sites are all considered factors when determining whether alternatives are

potentially feasible. The feasibility of potential alternatives was assessed taking the following factors into consideration:

- **Environmental Feasibility.** Would implementation of the alternative cause substantially greater environmental damage than the program, thereby making the alternative clearly inferior from an environmental standpoint? This issue is primarily addressed in terms of the alternative's potential to eliminate significant or potentially significant effects of the program.
- **Regulatory Feasibility.** Do regulatory or policy restrictions substantially limit the likelihood of successful implementation of an alternative? Is the alternative consistent with policies and regulatory standards or on-going Valley Water practices related to regulated activities such as pesticide use and work near sensitive habitats?
- **Technical Feasibility.** Is the alternative feasible from a technological perspective, considering available technology? Are there any implementation constraints that cannot be overcome?
- **Economic Feasibility.** Is the alternative so costly that implementation would be prohibitive? The CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (CEQA Guidelines section 15126.6[b]). The Court of Appeals added in *Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d, p. 1181 (see also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 736): "[t]he fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project." An example would be the costs for full water system replacement (refer to Section 5.3 for additional discussion of alternatives considered but rejected from further analysis).

5.2.4 Potential to Eliminate Significant Environmental Effects

CEQA requires that to be fully considered in an EIR, an alternative must have the potential to "avoid or substantially lessen any of the significant effects of the project" (CEQA Guidelines section 15126.6[a]). Identified alternatives that clearly do not provide overall environmental advantage(s) when compared to the program are eliminated from further consideration. At the screening stage, CEQA does not require the evaluation of all impacts of the alternatives in comparison to the program with absolute certainty; nor is it possible to quantify all impacts.

Table 5.2-1 presents a summary of the significant environmental effects of the Proposed PMP Update that can be mitigated to below the level of significance, and the sole significant and unavoidable impact from temporary noise increases in excess of local standards from construction equipment, as identified in Chapter 3, Environmental Setting and Impact Analysis.

The impacts in Table 5.2-1 were used to determine whether an alternative met CEQA Guidelines section 15126.6 requirements.

Table 5.2-1 Summary of the Proposed PMP Update's Significant Impacts that Can Be Mitigated, and One Significant and Unavoidable Impact

Environmental Resource Topic	Impacts
Aesthetics	• Significant but mitigable to less than significant impact on nighttime views due to light or glare associated with potential nighttime construction activities.
Biological Resources	• Significant but mitigable to less than significant impacts on special-status plant and animal species and their habitat due to ground disturbance, pipeline draining actions, and other infrastructure maintenance and repair tasks within the PMP area. • Significant but mitigable to less than significant impacts associated with riparian habitat or other sensitive natural communities due to ground disturbance, pipeline draining actions, and other infrastructure maintenance and repair tasks. • Significant but mitigable to less than significant impacts associated with federally protected wetlands due to ground disturbance, pipeline draining actions, and other infrastructure maintenance and repair tasks.
Cultural Resources	• Significant but mitigable to less than significant impact on cultural or historical resources due to ground disturbing program tasks.
Geology and Soils	• Significant but mitigable to less than significant impact on paleontological resources due to excavation associated with program activities.
Hazards and Hazardous Materials	• Significant but mitigable to less than significant impacts associated with reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment • Significant but mitigable to less than significant impacts due to interference with adopted emergency response plan or emergency evacuation plan.
Hydrology and Water Quality	• Significant but mitigable to less than significant impacts on surface water quality due to dewatering tasks and stormwater runoff. • Significant but mitigable to less than significant impact on flow dynamics potentially altering the course of a waterbody due to water releases to a natural watercourse.
Noise	• Significant and unavoidable impacts due to generation of a substantial temporary noise increase in excess of local standards associated generated by construction equipment during program activities. • Significant but mitigable to less than significant impacts associated with generation of groundborne noise and vibration in proximity to structures.
Public Services	• Significant but mitigable to less than significant impacts to public services related to emergency access during construction.
Recreation	• Significant but mitigable to less than significant impacts to recreational facilities such as trails, due to possible temporary closures in order to complete program activities.

Environmental Resource Topic	Impacts
Transportation	• Significant but mitigatable to less than significant impacts due to inadequate emergency access during program activities that may require lane or road closures.
Tribal Cultural	• Significant but mitigable to less than significant impacts on TCRs due to ground disturbing program tasks.
Wildfire	• Significant but mitigable to less than significant impacts due to the potential for exacerbated wildfire risk due to accidental ignition. • Significant but mitigable to less than significant impacts due to risks associated with post-fire slope instability.

5.3 Potential Alternatives Considered and Dismissed

CEQA Guidelines section 15126.6(c) states that an EIR should briefly describe the rationale for selecting the alternatives to be discussed in an EIR and the reasons for eliminating alternatives from detailed consideration. Alternatives are eliminated if they did not meet most of the basic program objectives, were not feasible, and/or would not avoid or substantially lessen the significant environmental effects of the program as assessed in the EIR. Valley Water considered several alternatives that were subsequently eliminated from further consideration. Table 5.3-1 provides a description of each rejected alternative and the rationale for rejection.

Table 5.3-1 Rejected Alternatives

Description of Alternative	Rationale for Rejection
Alternative Locations. This alternative would require relocation of pipelines so that maintenance activities and associated impacts would occur in alternate locations.	This alternative does not meet the feasibility screening criterion. Maintenance cannot be performed at a different location since the focus of the program is existing pipelines and system parts. An alternate location could not be used without constructing new pipelines in different locations; such an undertaking would be extremely costly, would create substantial environmental impacts associated with construction, and would not necessarily result in lessened environmental impacts from future maintenance as compared to the program. Therefore, no alternatives involving an alternate location were considered in detail.
Alternative Method of Repair. This alternative would consider alternative repair methods that could potentially reduce impacts.	Alternative methods of repair may be feasible; however, these methods would not reduce environmental impacts as the tasks required to complete them would be the same or similar. Further, the repair subtasks associated with the PMP generally have few environmental impacts. Repair follows industry standard techniques and/or manufacturer's specifications and depends upon the subject part or piece of equipment. The program is designed to be flexible for staff to determine the appropriate repair method, therefore all feasible methods have been included in the program. Therefore, alternative repair methods were not considered in detail in the PEIR.

Description of Alternative	Rationale for Rejection
Alternative Method of Excavation. This alternative would consider different methods of excavation to reduce ground disturbance.	Alternative excavation methods could include fewer bulldozers, or less digging; however, defining a limit at this juncture is not feasible. Excavation methods would be project specific and cannot be specifically defined at the program level. Defining specific excavation methods at the program level may not allow for the flexibility necessary to effectively meet the needs of specific repair. Therefore, alternative methods of excavation were not considered in detail in the PEIR.
Alternative of Defined Timing for Project Activities. This alternative would consider scheduling timing of program activities to reduce impacts.	Schedules for program activities are determined in activity-specific plans as appropriate. The proposed project (including AMMs and BMPs) generally does not define or limit activities to a certain timeframe, although there are some timing limitations. Some sensitive areas do exist where significant impacts to resources can be avoided or minimized by restricting the timing of activities. Temporal limitations for these areas are identified in AMMs or BMPs. An overall project description alternative that limits certain activities, such as water releases, to only the late summer months may not be necessary in all areas. Restrictions on water release timing may not be necessary in areas where there are few sensitive resources present, for example. Another reason for rejecting a timing-specific alternative includes this alternative's limited ability to allow for some corrective emergency maintenance that may not qualify for an exemption but does require work to be performed within a few months of the incident. Therefore, a timing-specific alternative was not considered in detail in the PEIR.
No Maintenance Activities. Under this alternative, future maintenance activities under the PMP would cease. Program activities would not be performed and no short-term specific impacts associated with program tasks, such as discharge, would occur.	This alternative does not meet the feasibility screening criterion. The pipelines would degrade, and the system would be compromised. Potential system failure would cause interruption of service and massive impacts as a result of pipeline failure in urban or rural environments. This alternative is considered infeasible and rejected because it would not meet the legal requirements of Valley Water as a water purveyor.

5.4 Alternatives Evaluated in the Draft EIR

This section discusses alternatives that passed the screening process and have been retained for analysis in the PEIR. These include the No Project Alternative, as required by CEQA, and a "Less Frequent Inspection and Maintenance Alternative." The Less Frequent Inspection and Maintenance Alternative would substantially meet most of the program objectives, would be potentially feasible, and would generally reduce some significant environmental effects of the proposed PMP update.

5.4.1 No Project Alternative

Description of Alternative

Under the No Project Alternative, Valley Water would not update the existing PMP or the PMP Manual and would continue to conduct maintenance activities under the 2007 PMP Manual and 2007 PMP EIR. As summarized in Chapter 2, Project Description, the 2007 PMP does not cover several pipeline maintenance needs that would be included in the updated PMP. Specifically, the 2007 PMP does not cover recycled water pipelines, vegetation management, land entitlements, and components of the conveyance system other than pipelines (such as pump stations and storage tanks). Therefore, under the No Project Alternative, such activities would continue to undergo individual CEQA review and would be evaluated on a case-by-case basis. These activities would still be performed in a similar manner as described for the proposed PMP update, with the main difference being the planning and review process prior to conducting activities. Therefore, under the No Project Alternative, the effects identified in individual activity reviews would be similar to the updated PMP, because the physical activities being undertaken would be the same.

With certain maintenance activities continuing to be reviewed on a case-by-case basis, the procedures may not occur in a consistent manner and may not address resource protection in as thorough a manner as described in the proposed PMP update. Individual reviews may also be more time-consuming than review under the proposed PMP update, which could result in delays to maintenance schedules. Potential delays could reduce the number of maintenance activities completed and extend the intervals of maintenance. This would increase risk of pipeline leaks or equipment failure or malfunction.

Rationale for Full Analysis and Relationship to Program Objectives

The No Project Alternative would not meet the basic objectives of the proposed PMP update; however, it is evaluated here for full analysis as required under CEQA. Table 5.4-1 presents the proposed PMP update objectives along with an evaluation of whether the No Project Alternative meets those objectives.

Table 5.4-1 Program Objectives: No Project Alternative

Program Objective	Does the No Project Alternative Meet the Objective?
Define standard practices and procedures for maintenance activities associated with Valley Water's conveyance systems.	No. Under the No Project Alternative, the activities covered under the 2007 PMP and PMP Manual would continue to occur under defined standard practices, but the PMP and PMP Manual would not be brought up to date to reflect current standard practices and procedures, and would not provide full coverage for the range of activities associated with maintaining the conveyance system (e.g., maintaining recycled water pipelines, removing vegetation, maintaining tanks, pump stations, and other facilities associated with the conveyance system).

Program Objective	Does the No Project Alternative Meet the Objective?
Enhance operational flexibility and adaptive management opportunities for evaluating and improving the maintenance activities defined in the PMP through learned experiences and successive planning over time.	No. The No Project Alternative would not update the 2007 PMP or PMP Manual, and thus would not bring the PMP or the manual up to date with the most current practices and procedures for maintenance activities. Operational flexibility and adaptive management would not be enhanced as compared to existing conditions.
Streamline the environmental documentation and local, State, and federal permit processing where required to facilitate efficient and timely maintenance and repair of the pipeline system.	No. The No Project Alternative would continue case-by-case review for activities not covered in the 2007 PMP or PMP Manual and 2007 PMP EIR, which would not provide the benefits of additional streamlining environmental documentation or permitting.

Summary of Comparative Environmental Impacts

Overview

The No Project Alternative would include the same physical activities as the proposed PMP update, but activities would be conducted either under the environmental documentation provided in the 2007 PMP or by case-by-case review.

Lessened Environmental Impacts

Due to the physical activities occurring under the No Project Alternative would be the same as with the proposed PMP update; there would be no lessened environmental impacts.

Similar Environmental Impacts

The physical activities occurring under the No Project Alternative would be the same as with the proposed PMP update, thus the environmental impacts would be similar. Under the No Project Alternative, individual CEQA review would be required for activities not included in the 2007 PMP. The assessments in individual review would be similar under the No Project Alternative, with the main difference being administrative process, and therefore would not have physical effects.

New or Greater Environmental Impacts

Because the physical activities occurring under the No Project Alternative would be the same as with the proposed PMP update, there would be no new or greater environmental impacts.

Conclusions

The No Project Alternative would have the same impact as the updated PMP because the physical activities completed would be the same. The No Project Alternative would not avoid or reduce the significant and unavoidable impacts associated with noise from the proposed PMP update. Other impacts related to ground disturbance or water releases would also not be reduced under the No Project Alternative.

The No Project Alternative would not meet the objectives of the proposed PMP update as the PMP Manual would not be brought up to date to define current standard practices, operational

flexibility and adaptive management would not be enhanced as compared to existing practices, and future environmental documentation and permitting would not be streamlined by including the full range of PMP activities.

5.4.2 Less Frequent Inspection and Maintenance Alternative

Description of Alternative

Maintenance on pipelines is completed as either preventative or corrective maintenance. Under both the existing and updated PMP, pipelines are and would continue to be inspected every 5 years. The Less Frequent Inspection and Maintenance Alternative would modify the frequency of the preventative maintenance schedule to every 20 years. The activities not included in the revised PMP, i.e., recycled water pipelines, vegetation management, land entitlements, and components of the conveyance system, would continue to require additional, standalone CEQA compliance.

Due to the increase in length of time between inspections, Valley Water would assume a higher risk that tasks required to complete maintenance on pipelines would increase in scale, complexity, and cost. While deferred maintenance would temporarily reduce implementation of maintenance tasks, pipeline failures would become more frequent as the pipelines would not be maintained to the industry standard.

As a result of the increased length of time between inspections, emergency repairs would become more frequent. Continual emergency responses would put a severe strain on Valley Water resources. A lack of available resources would have a cascading effect on inspection and rehabilitation, even to maintain the 20-year cycle, which would cause a consistent trend of reactionary maintenance rather than preventative.

Rationale for Full Analysis and Relationship to Program Objectives

This alternative is brought forward for full analysis because reducing the frequency of inspection would result in a temporary reduction of maintenance tasks, therefore temporarily reducing the frequency of environmental impacts. It would also temporarily reduce impacts to sensitive habitat for multiple wildlife and plant species by reducing the frequency of ground-disturbing tasks within the program area. Less frequent inspection would also temporarily reduce the number of water releases, decreasing the potential erosion and sedimentation impacts to watercourses. However, as discussed below, any reduction in impacts would be temporary as deferred pipeline maintenance would cause an increase in risk of pipeline failure and emergency maintenance. While this alternative would provide temporary reduction in the significant and unavoidable noise impacts that would result from construction equipment as part of the proposed PMP, it would not provide a long-term reduction in effects. Due to Valley Water's obligation as a water purveyor to provide safe, reliable water service, maintenance activities would eventually have to occur. Deferring maintenance would cause projects to be larger and more complex in nature, thus increasing the magnitude of environmental impacts.

This alternative is potentially feasible and partially meets the objectives of the proposed PMP update, as shown in Table 5.4-2. However, this alternative does not meet the second objective for enhancing adaptive management through improvements in operations through learned experiences and successive planning over time. This alternative also does not streamline the environmental process as projects would become larger and more complex, which may preclude them from PMP eligibility.

Table 5.4-2. Project Objectives: Less Frequent Inspection and Maintenance

Program Objective	Does the Less Frequent Inspection and Maintenance Alternative Meet the Objective?
Define standard practices and procedures for maintenance activities associated with Valley Water's conveyance systems.	Yes. Under the Less Frequent Inspection and Maintenance Alternative, the PMP Manual would not be updated, and maintenance would continue to occur under defined standard practices from the 2007 PMP Manual and EIR. This alternative would modify the existing standard practices and procedures in relation to deferring maintenance, although standard practices and procedures would still be defined.
Enhance operational flexibility and adaptive management opportunities for evaluating and improving the maintenance activities defined in the PMP through learned experiences and successive planning over time.	No. The Less Frequent Inspection and Maintenance Alternative would not provide for adaptive management that relies on learned experiences and successive planning over time. A 20-year maintenance cycle is not industry standard, nor developed based on best practices for operations, which have been developed based on decades of operational experience. An increase in emergency projects would not enhance operational flexibility and adaptive management as compared to existing conditions.
Streamline the environmental documentation and local, State, and federal permit processing where required to facilitate efficient and timely maintenance and repair of the pipeline system.	No. The Less Frequent Inspection and Maintenance Alternative would cause a backlog of larger scope and emergency projects due to the deferred maintenance. Larger projects may require work outside of the existing 2007 PMP and emergency projects are statutorily exempt from CEQA, which would not provide the benefits of additional streamlining environmental documentation or permitting.

Summary of Comparative Environmental Impacts

Overview

Under the Less Frequent Inspection and Maintenance Alternative, program tasks would continue to be completed under the existing 2007 PMP. As the tasks are generally the same for the 2007 PMP as the proposed updated PMP, the type of resource impacts described in Section 3 would be the same for this alternative. As inspections become less frequent, deferred maintenance would increase the risk of larger-scale maintenance projects being required. Maintenance would occur on larger pipeline sections, which would also directly increase the magnitude of the impacts for all resources described in Section 3. All applicable BMPs, program-specific AMMs, and mitigation would be applied and therefore, the impacts would be the same. However, the limited technical staff availability for required CEQA reviews would be

delayed, thus further delaying maintenance activities being completed and applying additional risk that emergency projects would be required.

Emergency projects are statutorily exempt from CEQA under CEQA Guidelines section 15269 and, therefore, could be completed without implementation of mitigation, and possibly without implementation of applicable BMPs and program-specific AMMs depending on the nature of the emergency. Under this alternative, there would be an increase in projects being completed on an emergency basis. Assuming emergency projects would increase as a direct result of this alternative, changes in resource impacts from emergency projects are described below.

Lessened Environmental Impacts
The Less Frequent Inspection and Maintenance Alternative would have a temporary reduction in potential impacts on hydrology and water quality and sensitive wildlife and plant species due to decreased activity levels under the program and associated reduction in ground disturbance from maintenance tasks compared to the proposed updated PMP. The decrease in maintenance frequency would result in a temporary reduction in impacts on transportation and emergency response services due to reduced frequency of lane or street closures as a result of reduced activity levels compared to the proposed updated PMP. The reduced activity level would require less equipment use, which would temporarily reduce impacts on air quality and greenhouse emissions. Significant temporary noise impacts would occur less frequently under the Less Frequent Inspection and Maintenance Alternative as there would not be maintenance activities requiring noise generating equipment as often.

Similar Environmental Impacts
Multiple resources would have similar impacts during emergency work as those described in Chapter 3. Equipment emissions impacting air quality and greenhouse gas would be similar to those evaluated in Sections 3.8 and 3.9. Energy consumption would also be similar as described in Section 3.10. All emergency maintenance would be completed on existing infrastructure; therefore, impacts would be similar to those described for land use and planning (Section 3.15), and agriculture and forestry (Section 3.18). Emergency response and evacuation plans would remain in place, emergency maintenance would not exacerbate pollutant exposures or modify the landscape that could contribute to an increase in wildfire risk.

Greater Environmental Impacts
Emergency pipeline repair could increase significant and unavoidable impacts for multiple resources. Hydrology and water quality (Section 3.1), geology and soils (Section 3.2), cultural resources (3.6), and TCRs (3.7) could experience significant and unavoidable affects as implementation of applicable BMPs, program-specific AMMs, and mitigation measures designed to reduce sedimentation and erosion would not be required for emergency projects. Measures designed to prevent stormwater runoff would not be required to be implemented, although projects with more than 1-acre of disturbance would still be required to develop and follow protocols of a SWPPP, as well as applicable Basin Plans, and NPDES requirements as described in Section 3.1.2 would still apply.

Impacts on biological resources (Section 3.3), including sensitive communities and habitats, special-status wildlife and plant species, avian and bat species, and protected wetlands may also rise to the level of significant and unavoidable under this alternative. In addition to projects being larger in size, scope, and duration, emergency projects would not be required to implement applicable BMPs, program-specific AMMs, or mitigation measures, leaving special-status wildlife and plant species more vulnerable to significant impacts.

An increase in the magnitude of and spontaneity of maintenance due to emergencies could increase impacts to transportation (Section 3.5), recreation (Section 3.16), and public services (Section 3.17), such as emergency services. As emergency projects do not undergo pre-planning, alternative routes would not be identified nor would affected public agencies be notified ahead of maintenance activities. This could have significant and unavoidable impacts to these resources due to road closures that would impact the level of service and time of travel for the public, recreational access may be disrupted without notice, and emergency service access may be impeded. Emergency maintenance work completed at night would not require mitigation to reduce glare, therefore, impacts to aesthetics could be significant and unavoidable. Additionally, pre-planning efforts to reduce the risk of wildfire (Section 3.13) would not occur and could increase the risk of unintentional and uncontrolled fires.

In absence of pre-planning during an emergency project, utilities and service systems (Section 3.14), specifically those underground such as fiberoptic communication, electrical lines, natural gas, and sewer facilities could be impacted. Unintentional discovery of other utilities during ground-disturbing tasks could be significant and unavoidable in the absence of the PMP required pre-planning measures to locate existing infrastructure prior to construction.

Impacts to noise (Section 3.11) would remain significant and unavoidable, although during emergency projects, may be increased as the program-specific AMMs and mitigation measures designed to reduce impacts would not be required. Pre-construction notifications would not occur and nighttime work and groundborne vibration could become more common.

Conclusions

The Less Frequent Inspection and Maintenance Alternative provides a temporary reduction in potential impacts on hydrology and water quality and sensitive wildlife and plant species due to a decrease in the frequency of maintenance tasks associated ground disturbance. A decrease in maintenance frequency would temporarily reduce impacts on transportation and emergency response services with a reduction in potential street closures. Less construction equipment activity would temporarily reduce impacts on air quality and greenhouse gas due to reduced emissions. Temporarily, significant impacts due to noise would be less frequent as there would not be maintenance activities requiring noise generating equipment as often.

Any reduction in impacts would be temporary as deferred pipeline maintenance would cause an increase in risk of pipeline failure and emergency maintenance. Deferring maintenance would cause projects to be larger and more complex in nature, thus increasing the magnitude of environmental impacts in the long term. Additionally, there would be an increase in emergency

repair, straining available Valley Water resources, which would impact staff availability for environmental reviews and inspections even at the delayed 20-year cycle. Emergency projects would result in greater environmental impacts as the emergency projects are not required to implement BMPs, program-specific AMMs, or mitigation measures.

5.5 Comparison of Alternatives

Table 5.5-1 includes a summary comparing the proposed PMP update and the alternatives by each impact statement within Chapter 3, Environmental Setting and Impact Analysis of this Program EIR.

Table 5.5-1 Comparison of Alternatives

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Aesthetics-1: Have a substantial adverse effect on a scenic vista, substantially degrade the existing visual character or quality of public views in nonurbanized areas, or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact on scenic vistas would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on scenic vistas would remain less than significant.
Impact Aesthetics-2: In urbanized areas, conflict with applicable zoning or other regulations governing scenic quality.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact on visual character and scenic quality would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on visual character and scenic quality would remain less than significant.
Impact Aesthetics-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	LSM	LSM	S/U	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts from light or glare would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures and mitigation would not be required and impacts from light or glare could increase to significant and unavoidable.
Impact Agriculture and Forestry-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on farmland would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on farmland would remain less than significant.
Impact Agriculture and Forestry-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on agricultural uses and Williamson Act lands would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar to the proposed PMP update, the impact on agricultural land uses and Williamson Act lands would remain less than significant.
Impact Agriculture and Forestry-3: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact due to conversion of farmland would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and the physical activities would be similar as the proposed PMP update, the impact due to conversion of farmland would remain less than significant.

[1] NI = no impact; LTS = less than significant impact; LSM = less than significant with mitigation measures identified in this EIR, SU = significant and unavoidable.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Air Quality-1: Conflict with or obstruct implementation of the applicable air quality plan.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact related to emissions conflicting with or obstructing implementation of the air quality plan would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, the impact related to emissions conflicting with or obstructing implementation of the air quality plan would remain less than significant.
Impact Air Quality-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the program region is non-attainment under an applicable federal or state ambient air quality standard.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, criteria pollutant emissions would not change, and the impact would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, criteria pollutant emissions would be similar, and the impact would remain less than significant.
Impact Air Quality-3: Expose sensitive receptors to substantial pollutant concentrations.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, there would be no change in the exposure of sensitive receptors to pollutant concentrations, and the impact would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, the exposure of sensitive receptors to pollutant concentrations would be similar, and the impact would remain less than significant.
Impact Air Quality-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	LTS	LTS	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, odor-generating impacts would not change and the impact would remain less than significant.	The physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, there would be no change in the exposure of sensitive receptors to pollutant concentrations, odor-generating impacts would be similar and the impact would remain less than significant.
Impact Biological Resources-1: 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.	LSM	LSM	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on special-status species would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for the emergency projects and impacts special-status species could increase to significant and unavoidable.
Impact Biological Resources-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.	LSM	LSM	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on riparian habitat or other sensitive natural communities would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts on riparian habitat or other sensitive natural communities could increase to significant and unavoidable.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Biological Resources-3: 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.	LSM	LSM	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on wetlands would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts on wetlands could increase to significant and unavoidable.
Impact Biological Resources-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	LTS	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on wildlife movement or nursery sites would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts on wildlife movement or nursery sites could increase to significant and unavoidable.
Impact Biological Resources-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	LTS	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflicting with local policies or ordinances protecting biological resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA and other local policies and ordinances. Mitigation measures would not be required and impacts related to conflicting with local policies or ordinances protecting biological resources could increase to significant and unavoidable.
Impact Biological Resources-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	SU	The physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflict with the VHP or other conservation plans would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA and other habitat or conservation plans. Mitigation measures would not be required and impacts related to conflict with the VHP or other conservation plans could increase to significant and unavoidable.
Impact Cultural Resources-1: Result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines.	LSM	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on historical resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts on historical resources could increase to significant and unavoidable.
Impact Cultural Resources-2: Result in a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines or disturb any human remains, including those interred outside of dedicated cemeteries.	LSM	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on unique archaeological resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts related to disturbing human remains could increase to significant and unavoidable.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Energy-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during program construction or operation.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, energy use would be the same and impacts would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, energy use would be the similar and impacts would remain less than significant.
Impact Energy-2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to State or local plans for renewable energy or energy efficiency would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, impacts related to State or local plans for renewable energy or energy efficiency would remain less than significant.
Impact Geology and Soils-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault; Strong seismic ground shaking; Seismic-related ground failure, including liquefaction; Landslides.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to seismic events would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, impacts related to seismic events would remain less than significant.
Impact Geology and Soils -2: Result in substantial soil erosion or the loss of topsoil.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on soil erosion or loss of topsoil would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts on soil erosion or loss of topsoil could increase to significant and unavoidable.
Impact Geology and Soils -3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the program, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts due to on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, impacts due to on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse would remain less than significant.
Impact Geology and Soils -4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property..	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, risks to life or property as a result of expansive soil would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, risks to life or property as a result of expansive soil would remain less than significant.
Impact Geology and Soils -5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	NI	NI	NI	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, no septic tanks or alternative wastewater systems would be constructed and there would be no impact.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, no septic tanks or alternative wastewater systems would be constructed and there would be no impact.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Geology and Soils -6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on paleontological resources and unique geologic features would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur under emergency status and be exempt from CEQA. Mitigation measures would not be required and impacts on paleontological resources and unique geologic features could increase to significant and unavoidable.
Impact Greenhouse Gas-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, GHG emissions would be the same, and the impact would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, GHG emissions would be similar, and the impact would remain less than significant.
Impact Greenhouse Gas -2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, consistency with plans, policies, and regulations adopted for the purpose of reducing GHG emissions would be the same as the program, and the impact would remain less than significant.	Although maintenance activities completed under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA and GHG plans, policies, and regulations. The physical activities of the Alternative and emergency projects would be similar to the proposed PMP update and therefore GHG emissions would also be similar and the impact would remain less than significant.
Impact Hazards and Hazardous Materials -1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to the routine transport, use, or disposal of hazardous materials would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, risks to life or property as a result of expansive soil would remain less than significant.
Impact Hazards and Hazardous Materials -2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LSM	LSM	SU	Because the physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to upset and accident conditions involving the release of hazardous materials into the environment would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to upset and accident conditions involving the release of hazardous materials into the environment from the emergency projects could increase to significant and unavoidable.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Hazards and Hazardous Materials -3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to emission or use of hazardous materials, substances, or waste within 0.25 mile of a school would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for the emergency projects; however due to the low frequency and likelihood of activities within 0.25 miles of a school the impacts related to emission or use of hazardous materials, substances, or waste within 0.25 mile of a school would remain less than significant.
Impact Hazards and Hazardous Materials -4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to locations on a list of hazardous material sites would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur at a reduced frequency, but in the same location at he proposed PMP update, and impacts would remain less than significant.
Impact Hazards and Hazardous Materials -5: For program pipelines located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would result in a safety hazard or excessive noise for people residing or working in the program area.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to creating a safety hazard or excessive noise for people residing or working in the project area would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur in the same areas as the proposed PMP update. The impacts would remain less than significant.
Impact Hazards and Hazardous Materials -6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impacts on impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts on impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan from the emergency projects could increase to significant and unavoidable.
Impact Hazards and Hazardous Materials -7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts of exposure to significant risk of less, injury, or death involving wildland fires would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts of exposure to significant risk of less, injury, or death involving wildland fires from the emergency projects could increase to significant and unavoidable.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Hydrology and Water Quality-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to violation of water quality standards or discharge requirements would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to violation of water quality standards or discharge requirements could increase to significant and unavoidable.
Impact Hydrology and Water Quality-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the program may impede sustainable groundwater management of the basin.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on groundwater supplies, recharge, and sustainable groundwater management of the basin would remain insert	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the program, impacts on groundwater supplies, recharge, and sustainable groundwater management of the basin remain less than significant.
Impact Hydrology and Water Quality-3: 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 that would: (1) result in substantial erosion or siltation on- or off-site, (2) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off-site, (3) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff, or (4) impede or redirect flood flows.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to altering drainage patterns would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to altering drainage patterns, flooding, or stormwater system capacity exceedances could increase to significant and unavoidable.
Impact Hydrology and Water Quality-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, risk of pollutant release due to project inundation would remain less than significant	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, impacts related to project inundation would remain less than significant.
Impact Hydrology and Water Quality-5: Conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to obstructing implementation of a water quality control plan or sustainable groundwater management plan would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to related to obstructing implementation of a water quality control plan or sustainable groundwater management plan from the emergency projects could increase to significant and unavoidable.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and		
Impact Land Use and Planning-1: Physically divide an established community.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to physically dividing an established community would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, impacts related to physically dividing an established community would remain less than significant.
Impact Land Use and Planning-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts due to conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, but at a reduced frequency. Impacts would remain less than significant.
Impact Noise-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	SU	SU	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, substantial temporary noise increases would have the potential to occur, and the impact would remain significant and unavoidable.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update and would have a temporary reduction in the frequency of maintenance activities in noise. However, due to reduced maintenance, the likelihood of emergency activities or larger projects would increase. Mitigation measures would not be required for emergency projects, substantial temporary noise increases from emergency activities would have the potential to occur, and applicable noise thresholds for nighttime and weekend work may still be exceeded. The resulting impact from emergency maintenance would remain significant and unavoidable.
Impact Noise-2: Generate excessive groundborne vibration or groundborne noise levels.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact related to excessive groundborne vibration or groundborne noise levels would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for emergency projects and impacts related to related to excessive groundborne vibration or groundborne noise levels from emergency projects could increase to significant and unavoidable.
Impact Noise-3: For program work sites in the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the program area to excessive noise levels.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impact related to exposing people residing or working in the program area to excessive noise levels in the vicinity of a public or private airport would remain less than significant.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would occur on existing infrastructure and would be similar to the proposed PMP update, impacts related to exposing people residing or working in the program area to excessive noise levels in the vicinity of a public or private airport would remain less than significant.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Public Services-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for public services including fire protection, police protection, schools, parks, and other public facilities.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impacts related to provision of new or physically altered governmental facilities or emergency service response would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to emergency service response from road closures could increase to significant and unavoidable.
Impact Recreation-1: The PMP would increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, the impacts associated with physical deterioration of recreational facilities or construction or expansion of recreational facilities would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required for the emergency projects and impacts related to recreational use and access of existing facilities could increase to significant and unavoidable.
Impact Recreation-2: The PMP would not include recreational facilities, nor would it require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	NI	NI	NI	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, no recreational facilities would be constructed or expanded and there would be no impact.	Physical activities completed under the Less Frequent Inspection and Maintenance Alternative would be similar to the proposed PMP update, no recreational facilities would be constructed or expanded and there would be no impact.
Impact Transportation-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflict with program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures and compliance with plans, policies and ordinances may also not be implemented or required. Impacts related to conflict with program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities from the emergency projects could increase to significant and unavoidable.
Impact Transportation-2: Conflict or be inconsistent with Section 15064.3(b) of the State CEQA Guidelines.	LTS	LTS	LTS	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to conflict with Section 15064.3 subdivision (b) of the State CEQA Guidelines would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The impacts from conflict with Section 15064.3 subdivision (b) of the State CEQA Guidelines would be slightly less than the proposed PMP update due to reduced vehicle travel and the impact would remain less than significant.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and		
Impact Transportation-3: Substantially increase hazards related to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts related to hazards related to geometric design features or incompatible uses would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to hazards related to geometric design features or incompatible uses (such as temporary road closure) from the emergency maintenance could increase to significant and unavoidable.
Impact Transportation-4: Result in inadequate emergency access.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the proposed PMP update, impacts on emergency access would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts on emergency access due to emergency activities could increase to significant and unavoidable.
Impact Tribal Cultural Resources-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: (i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or (ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the program, impacts on tribal cultural resources would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts on tribal cultural resources from emergency projects could increase to significant and unavoidable.

Impact Statement	Significance[1]			No Project Alternative	Less Frequent Inspection and Maintenance Alternative
	Program	No Project	Less Frequent Inspection and Maintenance		
Impact Wildfire-1: Substantially impair an adopted emergency response plan or emergency evacuation plan.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the program, the impact related to impairing an adopted emergency response plan or emergency evacuation plan would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts impairing an adopted emergency response plan or emergency evacuation plan from the emergency maintenance activities could increase to significant and unavoidable.
Impact Wildfire-2: Exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	LSM	LSM	SU	Physical activities completed under the No Project Alternative would be the same as the program, the impact related to exacerbating wildfire risks would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to exacerbating wildfire risks from emergency maintenance activities could increase to significant and unavoidable.
Impact Wildfire-3: 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.	LTS	LTS	SU	Physical activities completed under the No Project Alternative would be the same as the program, impacts related to installation of infrastructure that may exacerbate wildfire risk would remain less than significant.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to installation of infrastructure that may exacerbate wildfire risk from emergency maintenance projects could increase to significant and unavoidable.
Impact Wildfire-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.	LST	LST	SU	Physical activities completed under the No Project Alternative would be the same as the program, impacts related to exposing people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of run-off, post-fire slope instability, or drainage changes would remain less than significant with mitigation.	Maintenance under the Less Frequent Inspection and Maintenance Alternative would occur less frequently than under the proposed PMP update. The reduced frequency of activity would have a temporary reduction in impacts; however, emergency projects would become more likely as routine maintenance would not be conducted. Emergency projects are exempt from CEQA. Mitigation measures would not be required and impacts related to exposing people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of run-off, post-fire slope instability, or drainage changes from emergency maintenance projects could increase to significant and unavoidable.

5.6 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires the identification of an environmentally superior alternative to the proposed project. As noted in the alternative descriptions, the No Project Alternative is environmentally superior to the Less Frequent Inspection and Maintenance Alternative because the No Project Alternative would allow for continued maintenance of PMP facilities and reduced likelihood of major maintenance activities and emergency repair/maintenance being required. The No Project Alternative would implement the 2007 PMP, which could provide a lesser degree of environmental protection than the proposed PMP update due to outdated BMPs and mitigation measures, but would provide greater environmental protection than the increased emergency activity that would be expected with the Less Frequent Inspection and Maintenance Alternative. While the No Project Alternative is the environmentally superior alternative, the proposed PMP update would have fewer environmental impacts than the No Project Alternative since the proposed PMP update includes updated environmental protection measures. The proposed PMP update achieves all of the program objectives, including adaptive management which enables Valley Water to adjust inspection and maintenance based on learned experiences to continue to operate in the most environmentally friendly manner possible.

6 List of Preparers

6.1 List of Preparers

Table 6-1 Valley Water Contributors

Contributor	Role
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Tin Lin	Senior Engineer, Program Management
Lindsay Dalrymple	Associate Engineer-Pipeline
Joel Jenkins	Engineering Manager
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Keri Hill	Panorama Environmental	Project Manager: Hydrology and Water Quality, Cultural Resources, Tribal Cultural Resources
Jen Kidson	Panorama Environmental	Planner: Project Description, Air Quality, GHG, Noise, Alternatives, Other CEQA Considerations
Charolotte Hummer	Panorama Environmental	Planner: Geology and Soils, Hazards and Hazardous Materials, Air Quality, GHG,
Sara Sloan	Panorama Environmental	Planner: Energy, Land Use and Planning, Public Services, Ag and Forestry
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6 LIST OF PREPARERS

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